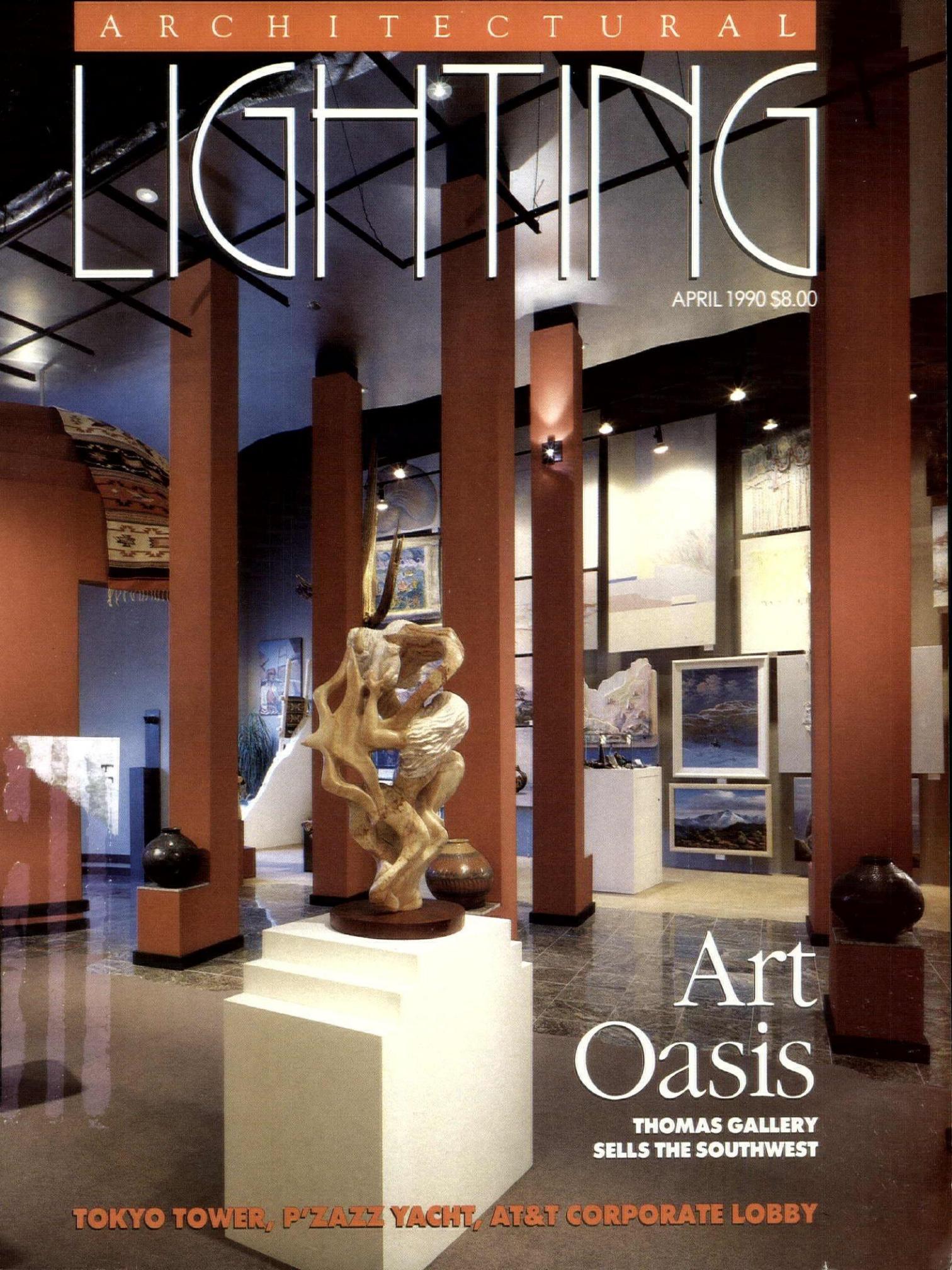


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Art Oasis

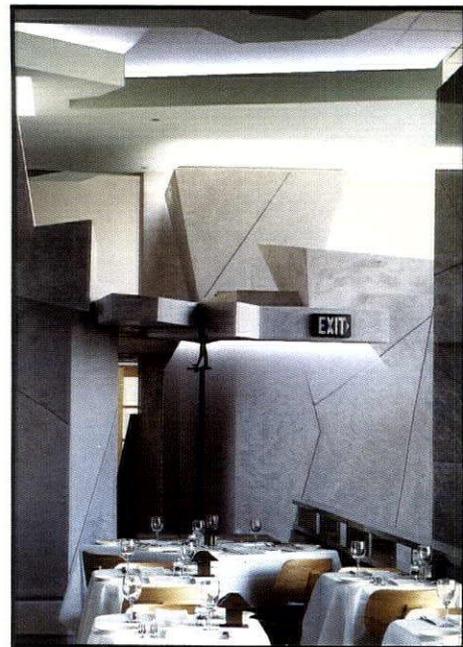
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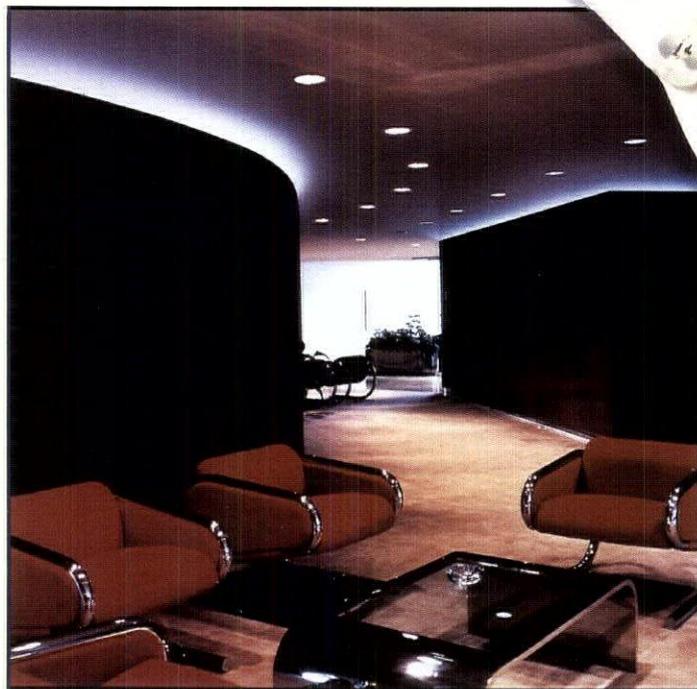


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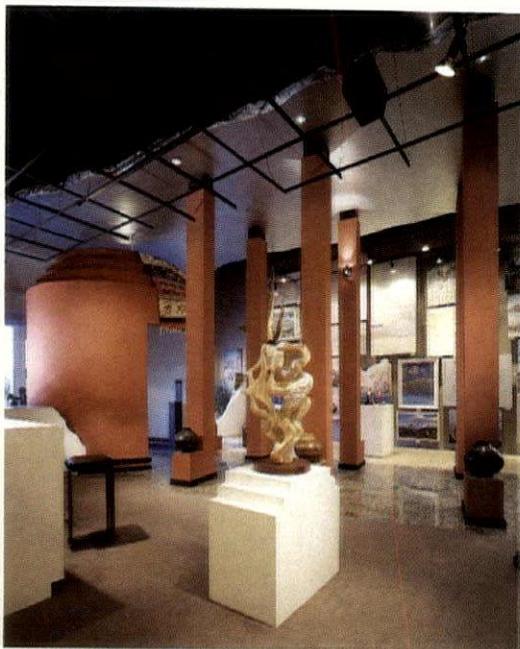


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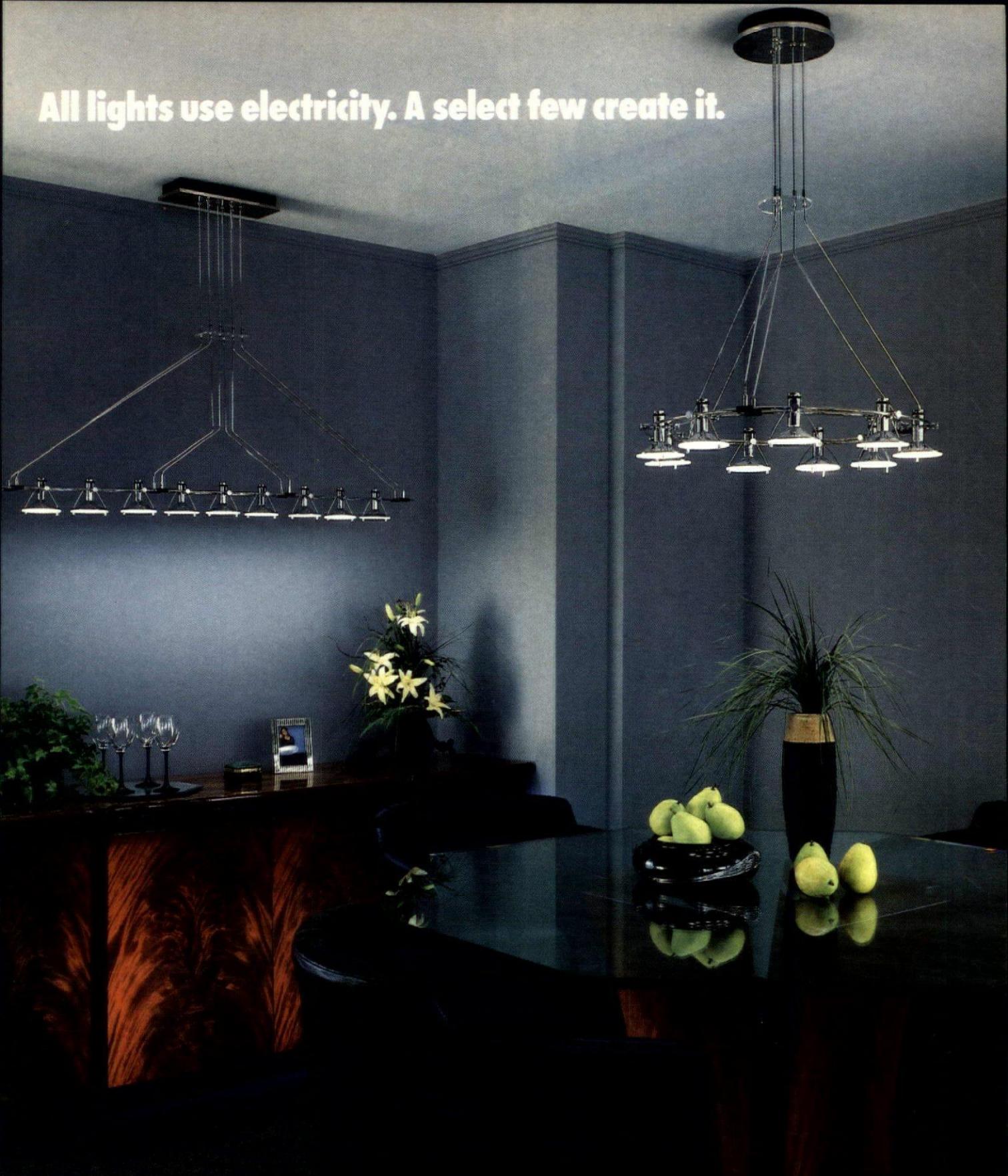
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CALENDAR

CONFERENCES & EXPOSITIONS

MAY 2-9 The World Light Show 1990. Hanover Fairgrounds, Hanover, West Germany; (609)987-1202.

MAY 12-15 NADI. Jacob Javits Convention Center, New York; (212)213-2662.

MAY 19-22 AIA Conference. Houston; (202)626-7396.

JUNE 12-15 A/E/C Systems '90. Georgia World Congress Center, Atlanta; (203)666-6097.

JUNE 14-16 Lighting World/Chicago. McCormick Place, Chicago; (212)391-9111.

JUNE 18-20 16th Annual Conference of the Solar Energy Society of Canada. World Trade Convention Centre, Halifax, Nova Scotia; (613)236-4594.

JUNE 19-21 International Lighting Exposition. Metro Toronto Convention Centre, Toronto, Ontario, Canada; (416)890-1846.

JUNE 29-JULY 1 34th Annual CSI Convention and Exhibit. McCormick Place East, Chicago; (703)684-0300.

JULY 29-AUGUST 2 IESNA Annual Conference. Omni Inner Harbor Hotel, Baltimore; (212)705-7269.

AUGUST 1-4 AIA 1990 Northwest & Pacific Regional Conference. Juneau, AK; (907)586-1371.

AUGUST 8-11 American Society of Interior Designers

(ASID) Conference. Atlanta; (212)944-9220.

AUGUST 11-13 RHIDEC, Restaurant Hotel International Design Exposition and Conference. Los Angeles Convention Center; (212)391-9111.

SEMINARS & WORKSHOPS

MAY 3 "The Impact of Color and Light on Office Exteriors," (IES seminar). Merchandise Mart, Chicago; (312)527-7981.

MAY 7-11 Lighting Design & Applications workshop. The Lighting Center, Philips Lighting Co., Somerset, NJ; (201)563-3600.

MAY 8 A shocking situation: Lighting and water and water and lighting, (DLF event). San Francisco; (415)626-1950.

MAY 17 Inauguration of officers, (IES event). Golden Gate Park, San Francisco; (415)495-7711.

JUNE 12 Right under our noses, (DLF event). Proceeds benefit local AIDS charity. San Francisco; (415)626-1950.

SEPTEMBER 10-14 Lighting Design and Applications Workshop. The Lighting Center, Philips Lighting Co., Somerset, NJ; (201)563-3600.

SEPTEMBER 17-19 Industrial Lighting seminar. The Lighting Center, Philips Lighting Co., Somerset, NJ; (201)563-3600. ■



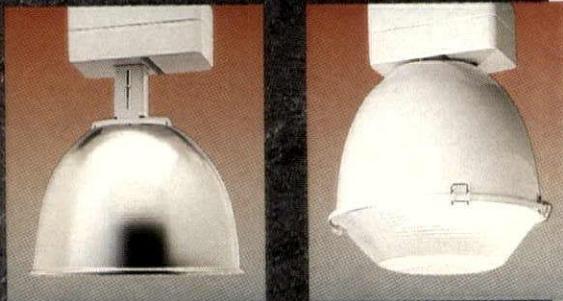
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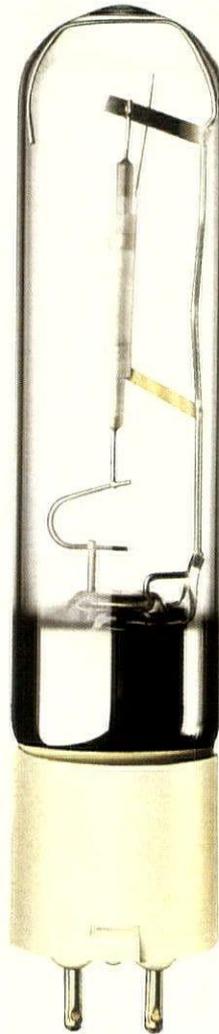


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PHILIPS

Switzerland's White House

BY CHRISTINA LAMB
ASSISTANT EDITOR



CHALLENGE The new headquarters of the Swiss Skiing Association, Haus Des Skisportes, in Bern, Switzerland, was designed to capture the flavor of a snow-covered ski slope by appearing bright and spacious.

DESIGN/TECHNICAL CONSIDERATIONS The facility is white with many large windows, so it is important that the lighting for the administrative offices be compatible with the clear, contemporary look of the building.

METHOD All offices are equipped with a combination of two lighting systems. Overall office illumination is provided by recessed mounted luminaires that are fitted with bell-shaped reflectors consisting of upper concave and lower convex louvers. The louver lighting offers precise distribution of light and helps to eliminate glare under normal viewing angles. Suspended indirect/direct fixtures are installed along the windows to ease the transition from bright sunlight to the artificial illumination inside the office. In offices with less daylighting, the fixtures create the illusion of sunlight. Suspended lighting was chosen for the reception area because of its distinctive, geometric shape.

CONCLUSION Haus Des Skisportes soon earned the nickname "The White House." With its clear lines, large glass windows, and appropriate lighting, the structure has all the originality and delicate distinction of the snow flakes that coat ski slopes throughout the world.



WHITE, INSIDE AND OUT: The Haus Des Skisportes (top) conjures up images of a snowbank. The interior lighting, (above, right) combines recessed and suspended luminaire systems.

DETAILS

PROJECT: ADMINISTRATIVE OFFICES OF HAUS DES SKISPORTES

LOCATION: MURI NEAR BERN, SWITZERLAND

ARCHITECT: MARAZZI GENERALUNTERNEHMUNG AG

ELECTRICAL PLANNING: ASCOM ELEKTRO AG

PHOTOGRAPHY: ZUMTOBEL

LIGHTING MANUFACTURER: ZUMTOBEL: REC (recessed mounted luminaires); ID-VM (suspended indirect/direct lighting system); PRO (suspended system)



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ARCHITECT:
Skidmore, Owings & Merrill,
Chicago

LIGHTING
CONSULTANTS:
Jules Fisher & Paul Marantz, Inc.,
New York

PHOTOGRAPHY:
Gary Knight

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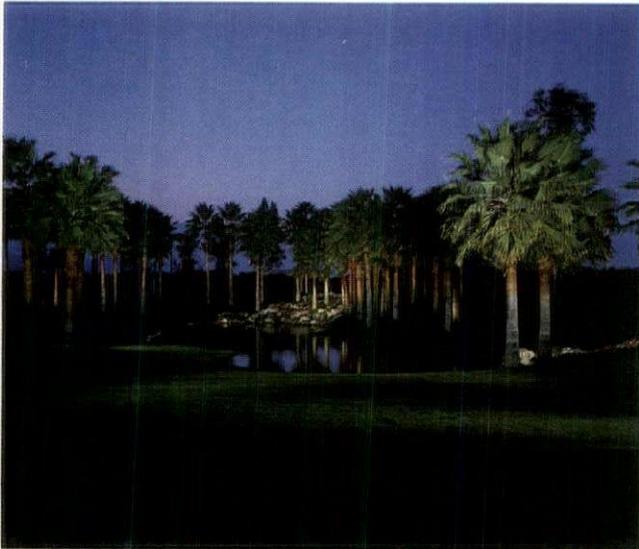
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Lighting Adds Magic To Exotic Landscape

BY CHRISTINA LAMB
ASSISTANT EDITOR



NIGHT LIGHTS: Lighting animates the landscape of this California residence (top), and accents the patinated roof of the house (above).

CHALLENGE The exterior of a private residence in Rancho Mirage, CA, with its unusually vast green lawn and many palm trees surrounding a small lake, required landscape lighting that would achieve a warm overall effect with a degree of drama. Also required was lighting that would accent the patinated roof on the house.

DESIGN/TECHNICAL CONSIDERATIONS Lamp fixture selection was significant in that it had to be environmentally sound, says Glenn M. Johnson, lighting designer for the project. The high acidic level of the soil in this desert location would affect the type of lighting used, so the fixtures' housing had to be corrosion resistant. Fixture placement also played an extremely important role as it was necessary to conceal the fixtures so that both the fixtures and aperture brightness would not be seen from any location. "It's critical never to light straight onto an object, but rather pull away and crosslight, keeping most of the light off the trunks and striving for a canopy effect," Johnson says.

METHOD The palm trees by the lake are illuminated with a mixture of 50-watt PAR 20 floods and 100-watt long-life floods. Low-level ground lighting is provided by 13-watt PL lamps, which produce a grazing effect across the lawn. The copper rooftop of the house, and both the sculpture to the left of the house and the deer bordering the lake, are uplit by MR 11s. Low-voltage MR 11 fixtures placed in the trees in front of the house, and MR 16s with soft focus lenses used in the recessed fixtures under the eaves, accent the roofline of the structure and graze exterior walls. Fiber optic lighting, placed under the lip of the steps, illuminates the stairs leading to the front entrance. The lights are controlled by a low-voltage dimming and switching system, which can be operated from multi-point locations.

CONCLUSION From design through installation, the project was completed in two years. The selected lighting enhances the lush colors of the landscape while adding dimension to the natural ambiance of this Southern California abode.

DETAILS

PROJECT: PRIVATE RESIDENCE

LOCATION: RANCHO MIRAGE, CA

LIGHTING DESIGNER: GLENN M. JOHNSON, LIGHTING BY DESIGN

LANDSCAPE ARCHITECT: MICHAEL BOCCINO

ARCHITECT: DAVID CHRISTIAN

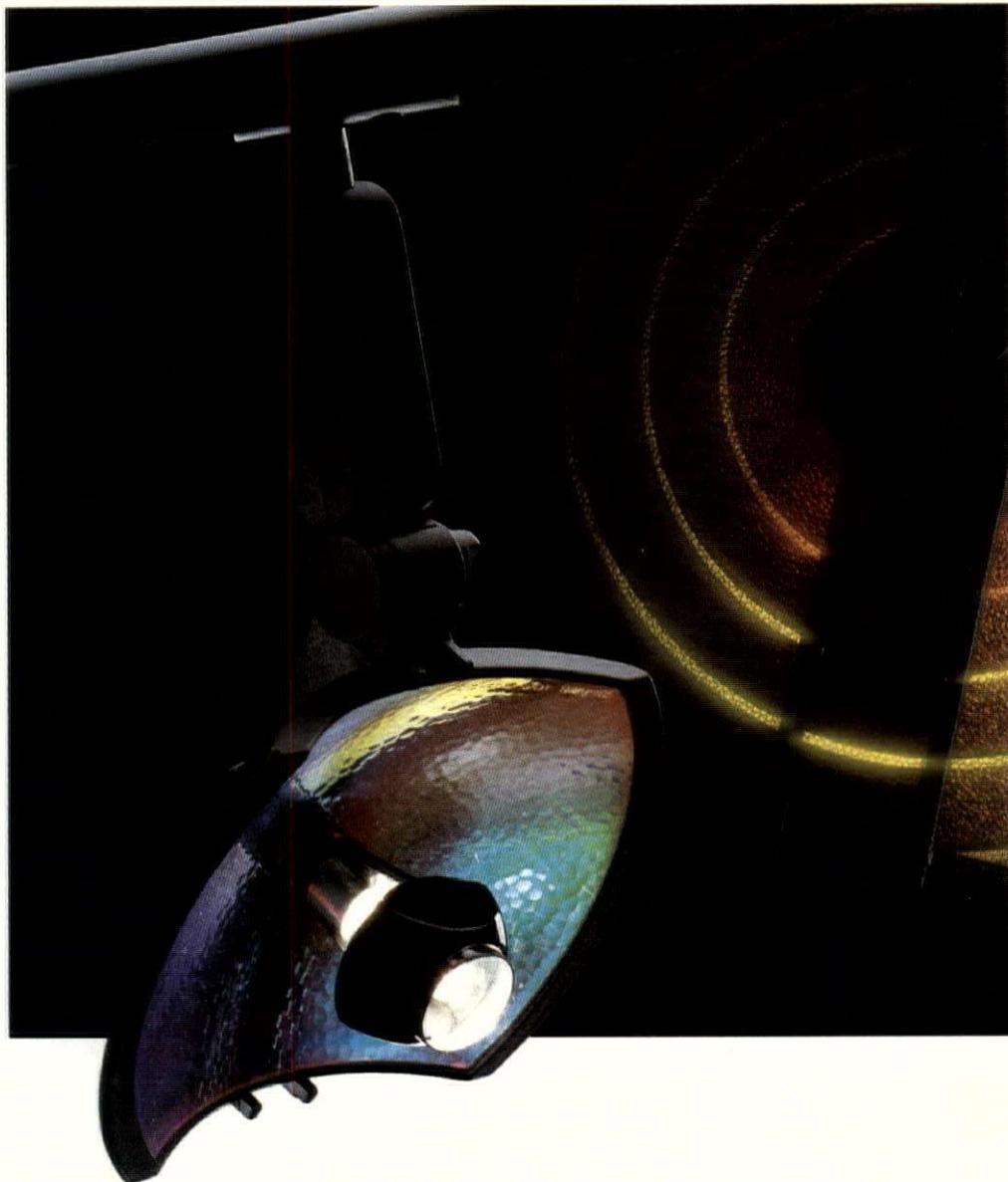
ELECTRICIAN: TOM JONES

PHOTOGRAPHER: ARTHUR COLEMAN, ARTHUR COLEMAN STUDIOS

MANUFACTURERS: SYLVANIA: 50-watt PAR 20 floods; AEROTEC: 100-watt, 20,000-hour floods; HALO LIGHTING: MR 16 accents; B.K. LIGHTING INC.: MR 11 accents; LUMA: 13-watt PL lamps; LUMENYTE: fiber optic step lights; LITETOUCH: dimming and switching system; HUBBELL INC.: 50- and 100-watt exterior fixtures.

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Tips On Planning Kitchen Lighting

BY RANDALL WHITEHEAD

Randall Whitehead is president of Light Source, Lighting Consultation and Specification, San Francisco.

The most-used room in the home today is the kitchen, and often it has become the most overlooked room in terms of carefully planned lighting design. The following questions and answers offer practical solutions to common problems in kitchen lighting, and provide specific information on fixture selection and placement.

What is the purpose of recessed incandescent downlighting, and when should it not be used?

Recessed fixtures do not provide the best type of general or ambient illumination. Since no light reaches the

ceiling, the upper quadrants of the room fall into darkness. This makes the room seem smaller and causes hard shadows on faces.

In California, by code (Title 24) all general illumination in kitchens and baths in new construction or remodels of 50 percent or more must be fluorescent. A series of recessed incandescent downlights would not be allowed. Do remember that lights designated as task or accent can be whatever light sources you prefer.

Many manufacturers offer recessed fixtures that use miniature fluorescents (PL lamps). These would qualify under Title 24.

Sometimes recessed fixtures must be used as task lights over counters or peninsulas where there are no overhead cabinets. In such cases, a fixture with a white reflector and a white opal lamp shield, which provides a wide spread of

illumination, should be used. The overlapping cones of light provide task light with a minimum of shadowing.

Do not use recessed fixtures outside cabinets to provide lighting for seeing the shelves inside. People would be looking at the shelves in their own shadows. Remember the best shadowless task light comes between the head and the work surface. Scalloping from recessed fixtures placed outside cabinets draws attention to the light itself and away from the cabinetry.

Ambient light can be planned to furnish enough secondary task light for seeing inside cabinets.

What type of lamp should be placed in recessed incandescent fixtures?

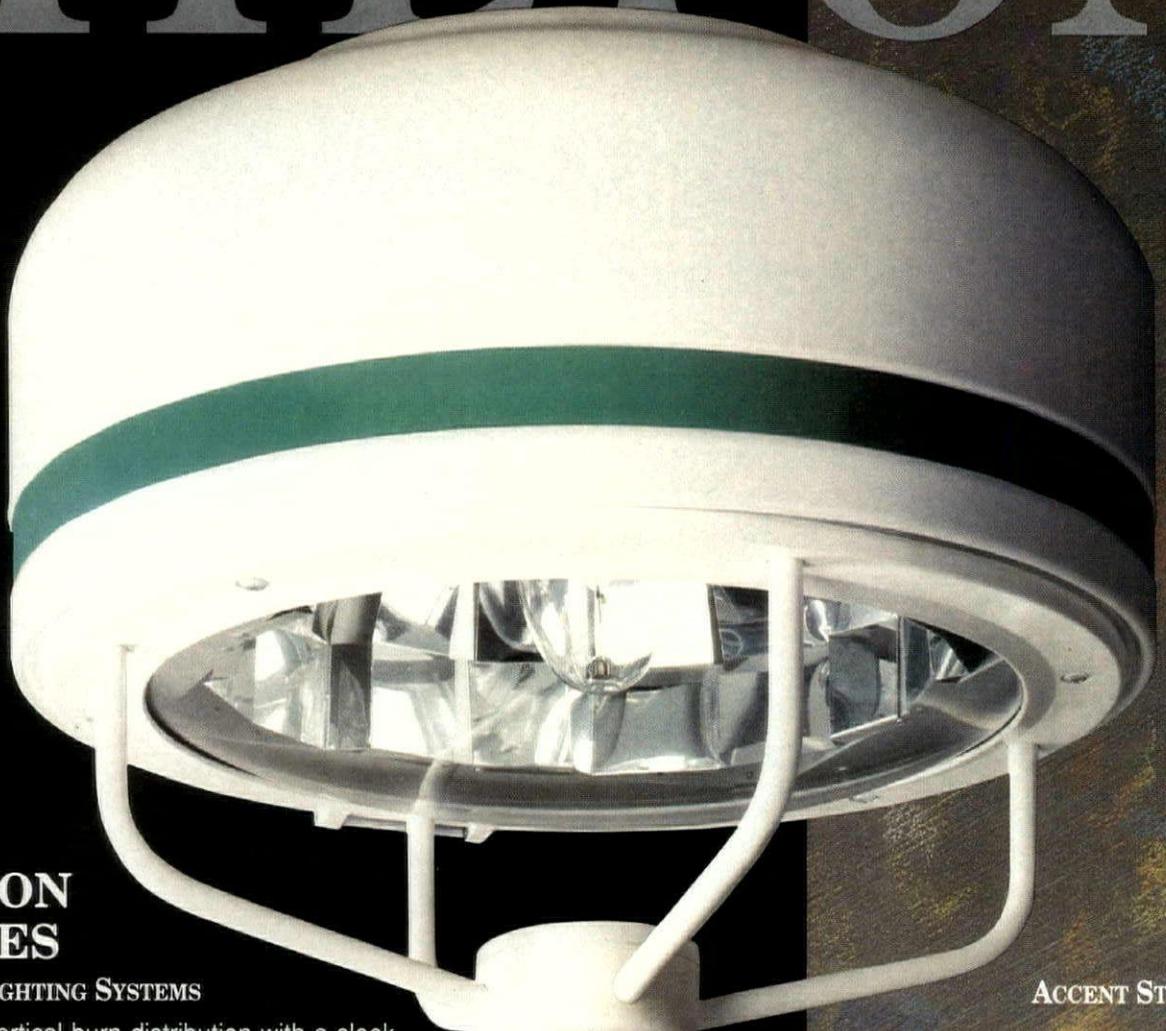
The white reflector/white opal glass fixture we recommend uses a 100-watt

CONTINUED ON PAGE 16

TAKEN TO TASK: Task lighting under the cabinet throws a good, shadowless work light onto the countertop.



HILTON

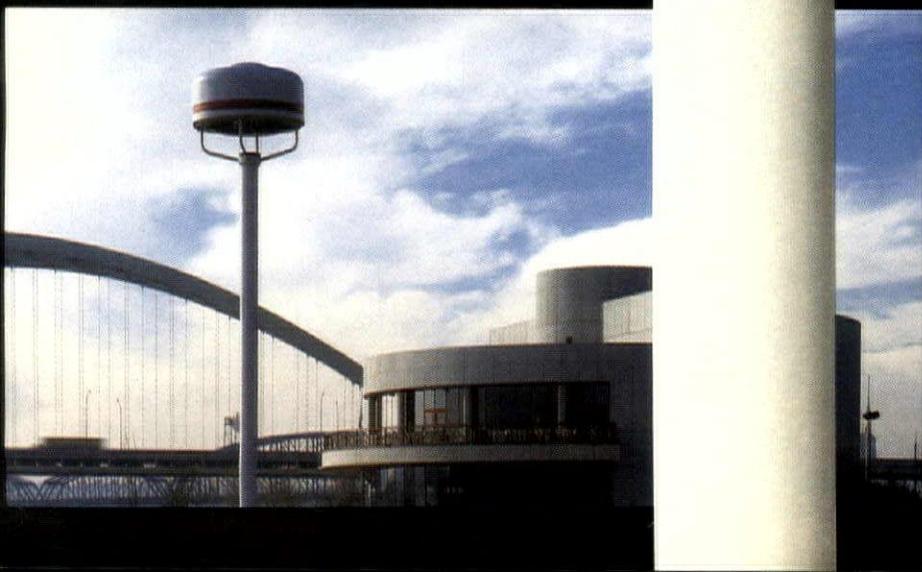
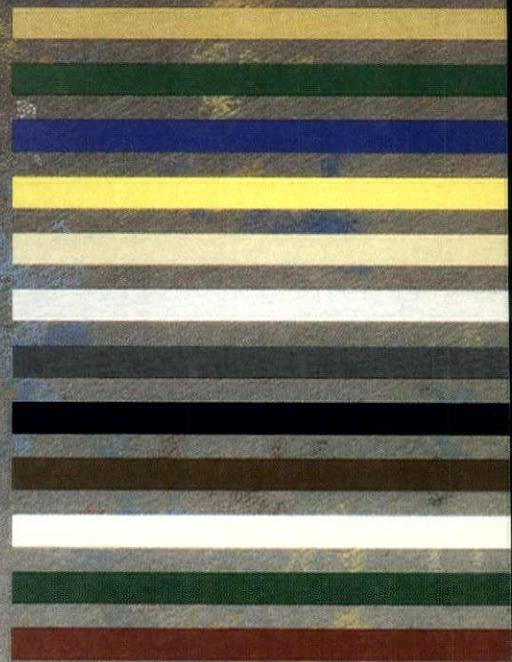


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KITCHEN LIGHTING
CONTINUED FROM PAGE 14

A lamp. If the fixture is to be used for accent light, we recommend the MR 16 in an adjustable type luminaire.

What type of lamp can be used in ceiling coves?

We almost always use fluorescent in ceiling coves, unless the space is too restrictive. The color temperature of the lamps should stay between 3,000 degrees and 4,000 degree Kelvin.

Where should under-cabinet fixtures be placed?

The optimum position for a task light is at a level between a person's head and the work surface. This is why un-



TASK MINUS AMBIENT EQUALS GLOOM: Task lighting from recessed incandescent luminaires without ambient lighting creates a gloomy space.

der-cabinet fixtures are an excellent example of good task-oriented lighting.

Under-cabinet fixtures, whether fluorescent or incandescent, should be mounted tight to the face of the cabinet. Light is reflected off the backsplash and onto the countertop to produce a good, shadowless task light.

Fixtures mounted toward the back of the cabinet tend to create glare for people seated at a kitchen table or island.

How far down should shielding come in front of the under-cabinet fixture?

This depends on the depth of the fixture chosen. The rule of thumb is at least 1 inch deeper than the fixture itself.

How can you avoid glare on shiny, dark countertops and backsplashes from under-cabinet fixtures?

This is a common problem, and one that is the toughest to solve. Mirror-like finishes reflect everything. One solution is to install a bottom fascia piece that shields the fixture from the countertop. The light reflects off the backsplash and onto the work surface. The drawback is that much of the light is caught behind the trim piece and never reaches the work surface.

A second solution is to install miniature recessed, adjustable low-voltage fixtures in the cabinet. Each fixture would take up the space about equal to that of a can of Progresso soup. These fixtures should be aimed at 45 degree angles to the work surface and louvered to avoid glare.

Where should fluorescent fixtures above cabinets be placed to achieve good indirect lighting?

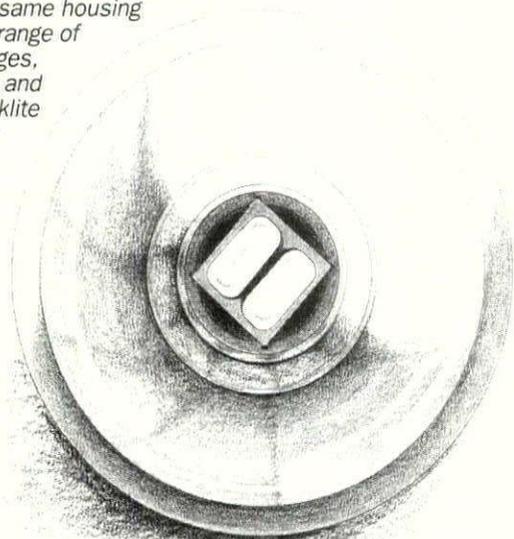
These fixtures should be flush with the front of the cabinets. If the fixtures are too close to the wall, bright spots will be created, and anything placed on top of the cabinets for display will block the light.

Remember to add blocking that lifts the display items to the fascia level, so that they are not visually cut off at the bottom.

How much distance should remain between the cabinet tops with over-

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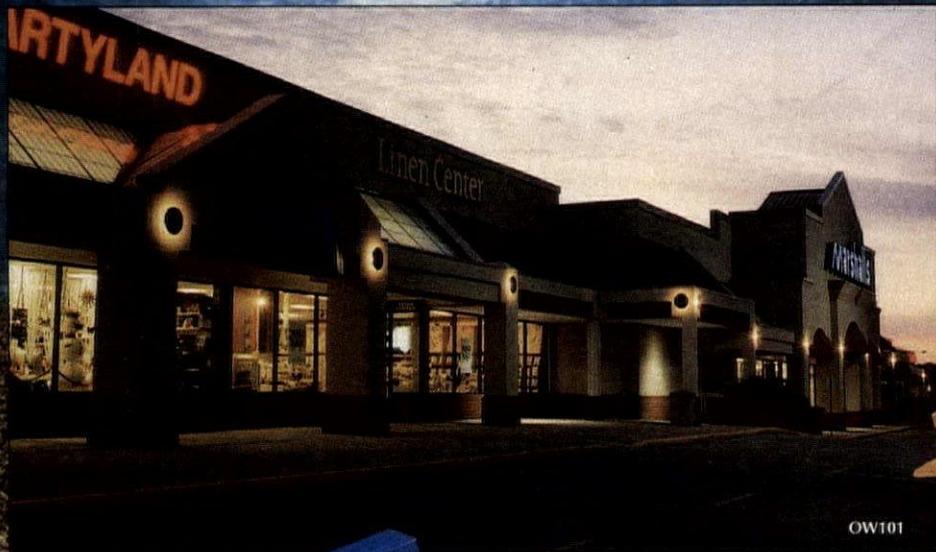
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OW101

Featured Below: Square Fixture: OW106, Dome Fixture: OW111



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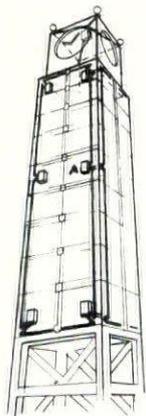
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KITCHEN LIGHTING
CONTINUED FROM PAGE 16

cabinet lighting and the ceiling?

Two feet is optimum. Less than 12 inches is too tight to allow the light to flow into the room.

Will shadows be created in between over-cabinet fluorescent fixtures if they are too far apart?

Even if fixtures are mounted end to end, there will still be a problem with dark spots. The further the fixtures are located from the wall, the less apparent the dark spots will be. Overlapping the fixtures 3 inches to 6 inches is the best way to avoid this problem.

Where can fixtures be placed to light the interior of a glass door cabinet?

If the shelves are made of glass, the fixtures can be recessed above shelves. If the shelves are wood, fixtures can be mounted horizontally on each shelf. If the shelves can be held back from the rear of the cabinet, then fixtures can be mounted on the back side of the shelves. Fixtures also can be mounted vertically behind the door frames.

How can glare be avoided when lighting tables and islands with dark, shiny surfaces?

Use pendant fixtures that are indirect or that have ceramic bowl reflector lamps. If the fixture is placed over a non-glossy laminate or stone finish, recessed fixtures are acceptable.

Recessed adjustable fixtures that project light at a 45-degree angle onto the mirror-like surfaces can also be used to provide non-glaring task light.

CENTERED FIXTURE NO-NO: Still typical in most of the U.S. is a fixture centered on the ceiling. The problem with this is the individual is always in his or her own shadow.

If there is a vegetable sink in the island, does the luminaire go directly over it?

You may not need task light near the sink if you have enough strong ambient light that also furnishes good secondary task light.

If you install recessed fixtures above the sink, the moment you bend your head to look at the vegetables, you create a shadow.

If you must use recessed fixtures, use two flanking the sink.

Are there any guidelines for placement of skylights?

Use a white opal skylight, which dif-

fuses the daylight. Clear or bronze versions project a hard light in the shape of the skylight itself, just like a window projects an image of itself onto the floor.

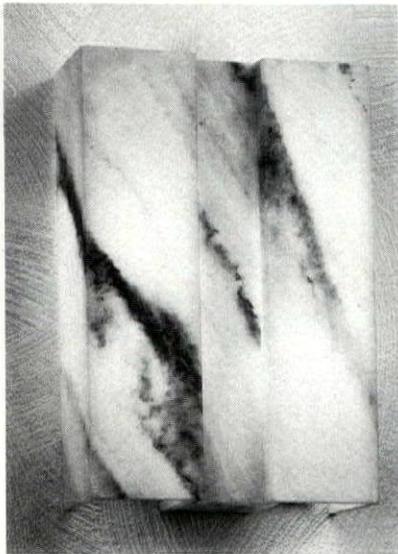
Also, always get an ultraviolet inhibitor. It's a standard option, and prevents premature fading and sun-rotting of natural materials.

Skylights should not be centered over tables or islands, because it makes the placement of fixtures for night lighting difficult. Locate skylights within the layout of the ceiling plane, not the floor plan.

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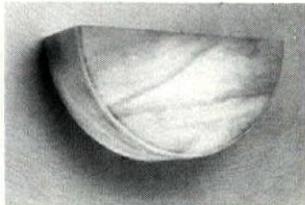


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How does the color temperature affect color rendering?

For code and energy reasons, designers are forced to mix light sources: incandescent, fluorescent, quartz (tungsten halogen), and low voltage. Keeping a consistent color temperature range among sources within a room,

and from room to room, will create the most inviting atmosphere.

Avoid choosing light sources that render your color scheme perfectly, but greatly affect skin tones. How people look should be considered first. It's better to sacrifice a little of your color rendering ability to insure good skin tones.

Generally, stay within the 3,000 degree to 4,000 degree Kelvin color temperature range. Orange/red kitchens should stay in the 3,000 degree Kelvin range, while blue/green kitchens should be lighted with lamps in the 4,000 degree Kelvin range. White kitchens will look "whiter" and still render skin tones well if lighted more towards 4,000 degree Kelvin.

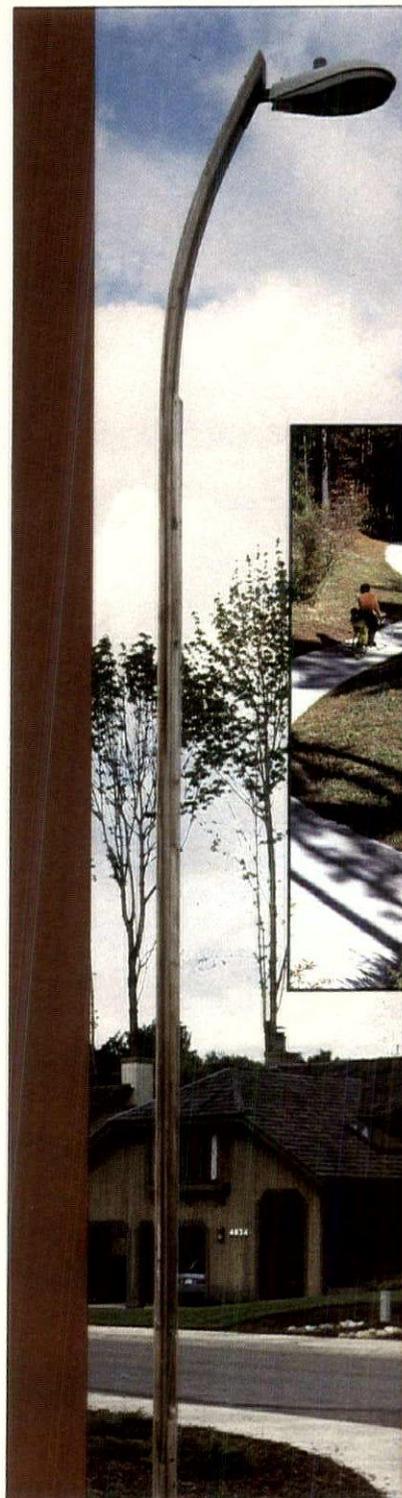
Each light source comes in a variety of color temperatures. There are over 200 colors available in fluorescent. Incandescent bulbs come in a variety of color temperatures, too.

In high-end, high-budget jobs, do energy considerations still apply?

Whether it's a high-end or an economy kitchen, energy costs should be considered. No one wants to spend more money on energy than is necessary.

Incandescent A lamps are the least energy efficient. Quartz supplies approximately twice the amount of light provided by an A lamp of the same wattage. Fluorescents give five times

CONTINUED ON PAGE 22



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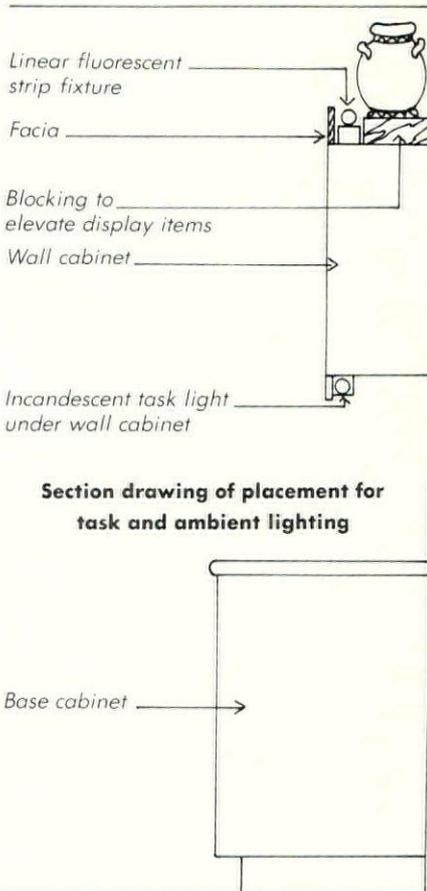
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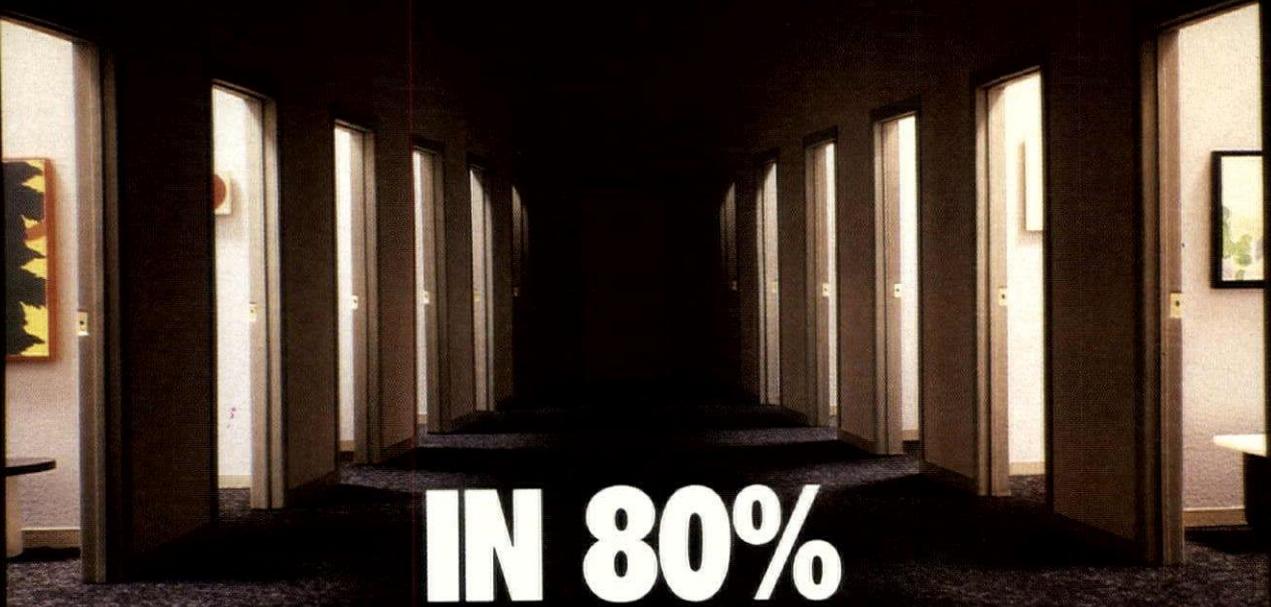
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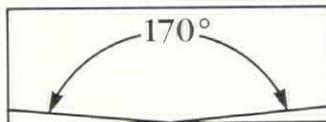
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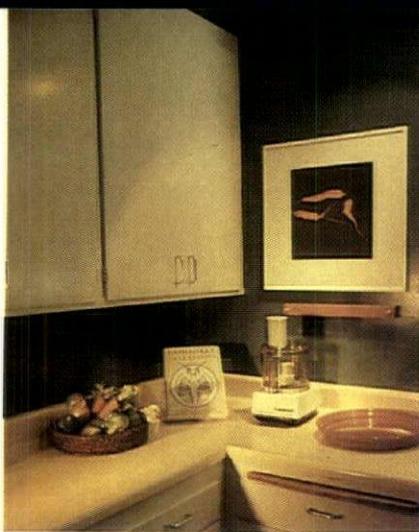
KITCHEN LIGHTING
CONTINUED FROM PAGE 20

the amount of an A lamp of the same wattage.

Should controls and dimmers be standard in high-end jobs?

In today's open plan houses, lighting in the kitchen should be as flexible in the variety of light levels available as the rest of the house. Even budget jobs deserve a dimmer or two. High-end projects may use a preset multi-scene dimming system.

Remember that incandescent and quartz light sources become more amber as you dim them. Fluorescent lamps do not have a color shift when dimmed.



CONSIDER THE SOURCE: Light source selection can help or hinder a kitchen design. Here, the incandescent light casts an amber glow and makes the hunter green look muddy.

What are some of the more exciting developments in lighting that can be incorporated into the kitchen?

Neon is fine in situations where there is a good amount of ambient noise, but in quiet areas the inherent hum can be disturbing. The transformer can be re-moted to reduce the noise level. Also, be careful with color selection. Intense neon colors can shift the room's color scheme.

Fiber optics provide a subtle glow of

light for toekicks and under island or bar counters. The illumination from a fiber optics fixture is even as long as the fiber optic is looped back into the light source or illuminated from both ends. Otherwise, your lighting will be brightest at one end.

Backlighting glass block is great. Remember, you can't light glass block directly, as the light simply travels through it and your light source will be visible. You must light whatever wall or surface is behind the glass block. If you are doing an island base, you should sandblast the block on one side to obscure the light source. ■

Pratica

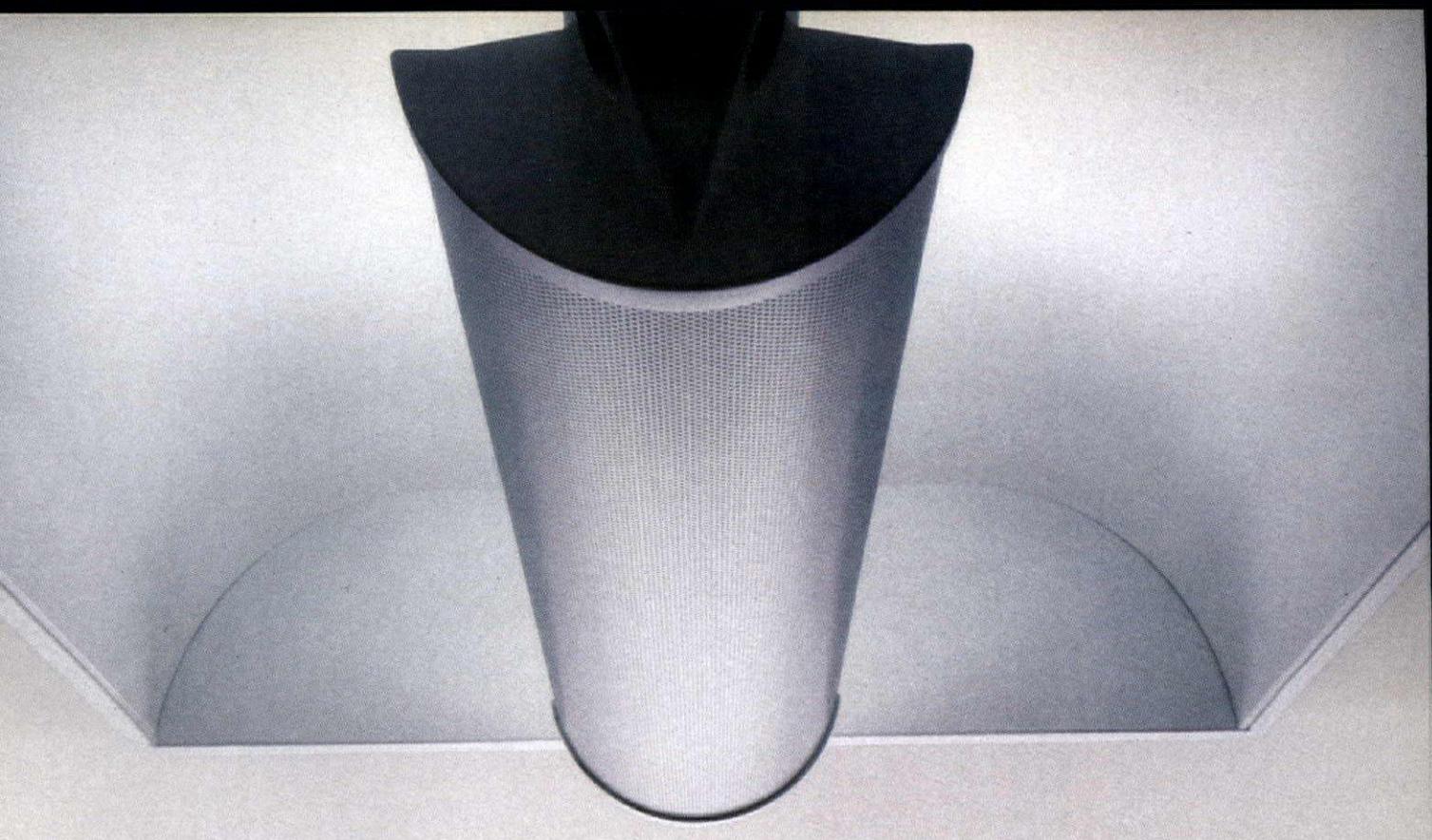
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International Growth and Change

LIGHTING ABROAD

The international scene today is bursting with growth and change—boundaries are being shifted, governments restructured, and cultures are gradually being reshaped by it all.

Of course, economic and political issues and events are also affecting the lighting industry. The marketplace for products and services in this industry is slowly becoming a global one.

More and more Americans are working overseas both for U.S. and foreign clients. On pages 26 and 28, we've rounded up three U.S. consultants who share their views on the differences and similarities in designing lighting abroad.

As a sampling of the high quality of design work being done overseas by foreign designers, we've included the Tokyo Tower by Motoko Ishii on pages 32 and 33.

Though the U.S. does exceed every other nation in the number of professionals involved in lighting, the awareness of lighting as art and science is increasing abroad. For example, formal efforts are being made to unify and expand the number of independent consultants by the European Committee of the International Association of Lighting Designers (IALD).

Three years ago when it was formed, the European Committee had four members.

"There are now about 19 members, most of them in England," according to Nick Hoggett, IALD, of Derek Phillips Associates, Bovingdon, England, who is the committee chairman. "Although it's still a relatively small number, the committee has grown and we intend to keep it accelerating as much as possible.

"We have some set ideas about what we'd like to achieve in the next year. We'd like to increase IALD members in Europe; and promote the use of independent lighting consultants, and particularly, consultants who are IALD members, to building owners, users, and other members of the design team.

"One of our important aims is to get lighting designers together to have some cross-fertilization and discussion of ideas with each other because we all learn a great deal from that," Hoggett says.

Growth and change in lighting design abroad will happen as it did in the U.S. decades ago—with groups of professionals sharing common interests and working together.

WANDA JANKOWSKI
EDITOR

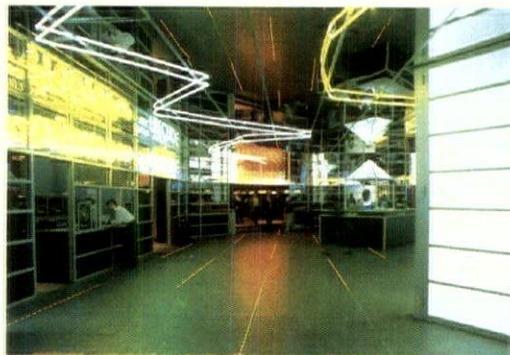
Americans Overseas

The marketplace for design services for many architects and designers is fast reaching global proportions, due to an influx in the U.S. of foreign investors with properties abroad, the internationalization of many U.S. corporations.

LIGHTING ABROAD

As a first step in helping you cope with the ever-shrinking world around us, insights into the quality of workmanship overseas, local codes, availability of products, and building relationships long distance are shared by three top lighting designers who have worked abroad extensively.—WJ

WORKING IN ISTANBUL: Jules Horton's firm designed the lighting for this arcade in Turkey (right, and opposite page top) using locally available equipment. A fee structure for lighting design was built into the project from the start.



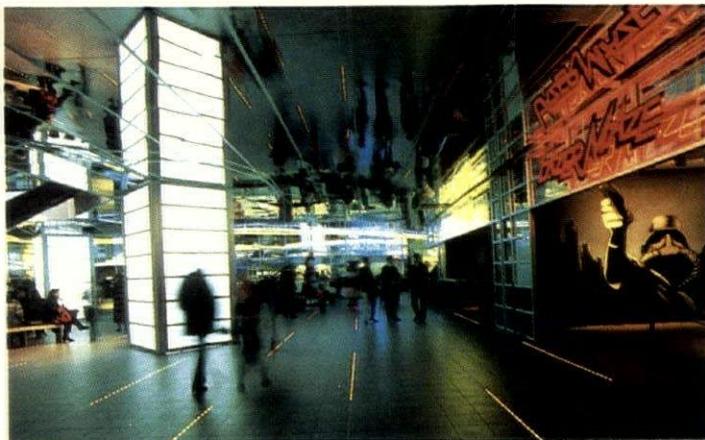
JULES HORTON, FIALD HORTON · LEES LIGHTING DESIGN INC. NEW YORK AND SAN FRANCISCO

"Clients with whom we work abroad fall into three categories: foreign owners, foreign architects, and U.S. architects who have been hired by foreign owners.

"If the client comes from abroad, sometimes he or she needs to be educated about lighting—like a patient who has never been to a doctor. Some foreign owners never heard of the profession of lighting design and this is a first experience for them.

"In working abroad, it is essential to be aware that cultural values, business methods and relationships, codes, availability of materials, duty paid for importing equipment, and a number of other factors vary from country to country.

"You cannot say, 'I worked in Saudi Arabia, so I know the Middle East.' Just as in the U.S. where every state has its own regulations, it's even more diverse when you're dealing with sovereign states. In Europe, one of the reasons which often makes it easier to specify European products is



because they are produced to satisfy local codes.

"It is also important to become quickly familiar with quality of workmanship—what you can and cannot expect—which varies from country to country. After the project is completed, for example, will a maintenance staff be available that will understand the fixtures you specified?

"For example, if you are doing a project in Germany, you don't have to worry about quality. But the list of countries that sophisticated in this respect is not extensive.

"We recently completed a project in a suburb of Istanbul, Turkey (shown). It is like a large indoor arcade, with miniature golf, bowling and video games. It was designed in the U.S. and specified around European lighting hardware

available in Istanbul.

"We had to learn about the capabilities of the contractor and of the people who were installing the equipment. We tried to make the drawings and lamp schedules as simple and understandable as possible because the owners chose not to fly us over there for extensive meetings or during installation. We had to do it all by telex, Fax and telephone, in addition to drawings.

"Very often the lighting designer is called on a project after the financial pie has been cut up, in which case there may not be enough budget left for comprehensive participation. In this case, however, we were on the project from the beginning. Consequently, there was a fee structure built in from the start."

CHARLES STONE
JULES FISHER & PAUL MARANTZ, INC.
NEW YORK

"I think the U.S. economy is weakening in terms of the number of large scale developments and high-quality projects underway. That affects not only architects, but all consultants on the design team. So in the 1990s, we think the percentage of our work abroad will continue to rise slowly.

"The culture of the country always affects the project. And this is so not only regarding the sensibilities that affect lighting design, but also in the way business is conducted.

"We have staff members in our office who maintain a library and constantly update information from all over the world to make sure we are aware of what's going on out there.

"We could not have done so many foreign projects before the dawn of FAX, but what fascinates me is how out of balance our lives have become with the FAX machine. It's like a drug—you've got to have it, and then every-

CONTINUED ON PAGE 28



FASCINATING FUKUOKA: Jules Fisher & Paul Marantz, Inc. collaborated on the lighting for the Nikko Hotel (ballroom, top left; exterior, below left) in Fukuoka, Japan with Kaoru Mende of TL Yamagiwa in Tokyo. "We worked together to translate our ideas into Japanese technology—lamps and fixtures," Charles Stone says.



CONTINUED FROM PAGE 27

thing gets faster. When the client FAXs you a question, the client expects to get the answer in 24 hours or less, and that means all the expectations of speed are increased.

"As much as possible, documents for our foreign projects are produced in 8½×11 booklet form—a size that fits in the FAX machine.

"What I have also learned working abroad is that face to face contact on a regular basis is crucial. That is far more important than FAX machines. You have to see the people involved in the

project and get to know them. It's good to build a relationship, so when you talk to a client or engineer or designer on the phone you know who you're talking to and he's comfortable with you.

"This is important especially because this business of lighting design is already a little bizarre—the way we fit into the construction process from the schematics all the way to the end. Some of the crucial work in lighting is done on day one and some on the last day when the lamps are focused at the project's completion. It's a process that requires a human element all the way through."

**LESLEY WHEEL, FIALD
WHEEL GERSZTOFF FRIEDMAN
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LOS ANGELES AND NEW YORK**

CONTEMPORARY

KOREA: "You're apt to find," Lesley Wheel says, "that Americans are more interested in reflecting the local culture than the local people." Wheel's firm worked with interior designers to create a western, contemporary look for the Seoul Hilton in Korea.

"One of the fascinations of working overseas is discovering that what's good and what's bad in design is an international language that would be agreed upon by most designers around the world. You can sit down with a German designer or architect with neither of you able to speak the other's language, but you point to something that's incorrect on the drawings, and agree, 'We've got to fix this.'

"Integrating elements of foreign culture

doesn't apply to lighting as much as it does to the interior design. Lighting, of course, comes out of what the building and the interior look like. And that's true whether you're in the U.S. or another country.

"What we as lighting designers often have to deal with are restrictions. If you're working in Addis Ababa, you must simplify the lamp schedule, because you're not going to get sophisticated light sources there.

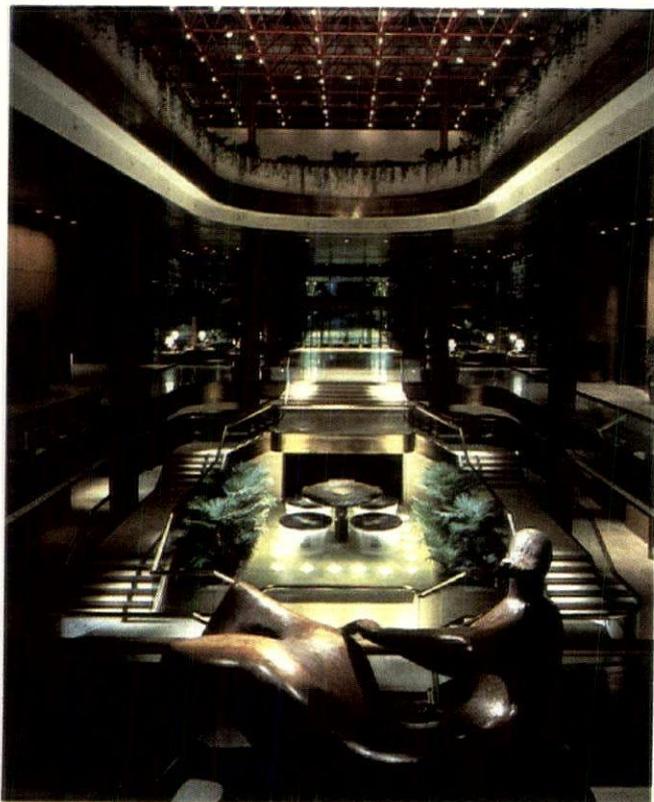
"The equipment we specify in projects abroad is based also in part on the best price we can get for the client. I think it's a cop-out to always use American fixtures. Part of our job is to find out what's available locally and use it if we can.

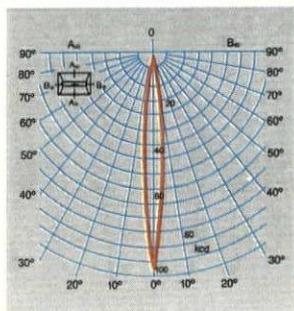
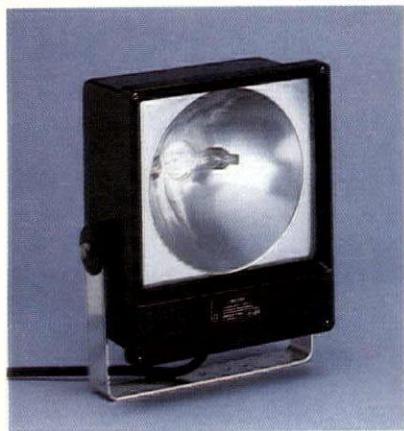
"Perhaps Singapore has the most stringent energy code of any place we have worked so much so that we ended up putting downlights in a hotel ballroom on track because tracks don't count in the energy equation. In a way, the design process is the same whether you are designing in the U.S. or abroad, because what you're doing in lighting is solving problems.

"I think American designers are working overseas more and more because American companies overseas are more comfortable with them. We do a lot of projects for hotel companies that have properties abroad.

"Most of our work, however, is from referrals. For example, a foreign owner will see a hotel here in the U.S. that they like. They will go to the American architect who designed it and request their facility abroad be designed in a similar style. Then the architect will assemble the same team that worked on the U.S. hotel and we get included that way.

"Though I enjoy working abroad as much as I do domestically, I would warn designers to be careful to whom they are contracted abroad. The policy of clients in some countries is not to pay the fees if the designs are not ultimately adopted, no matter how extensive a firm's work on the project has been."





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PROGRESSION



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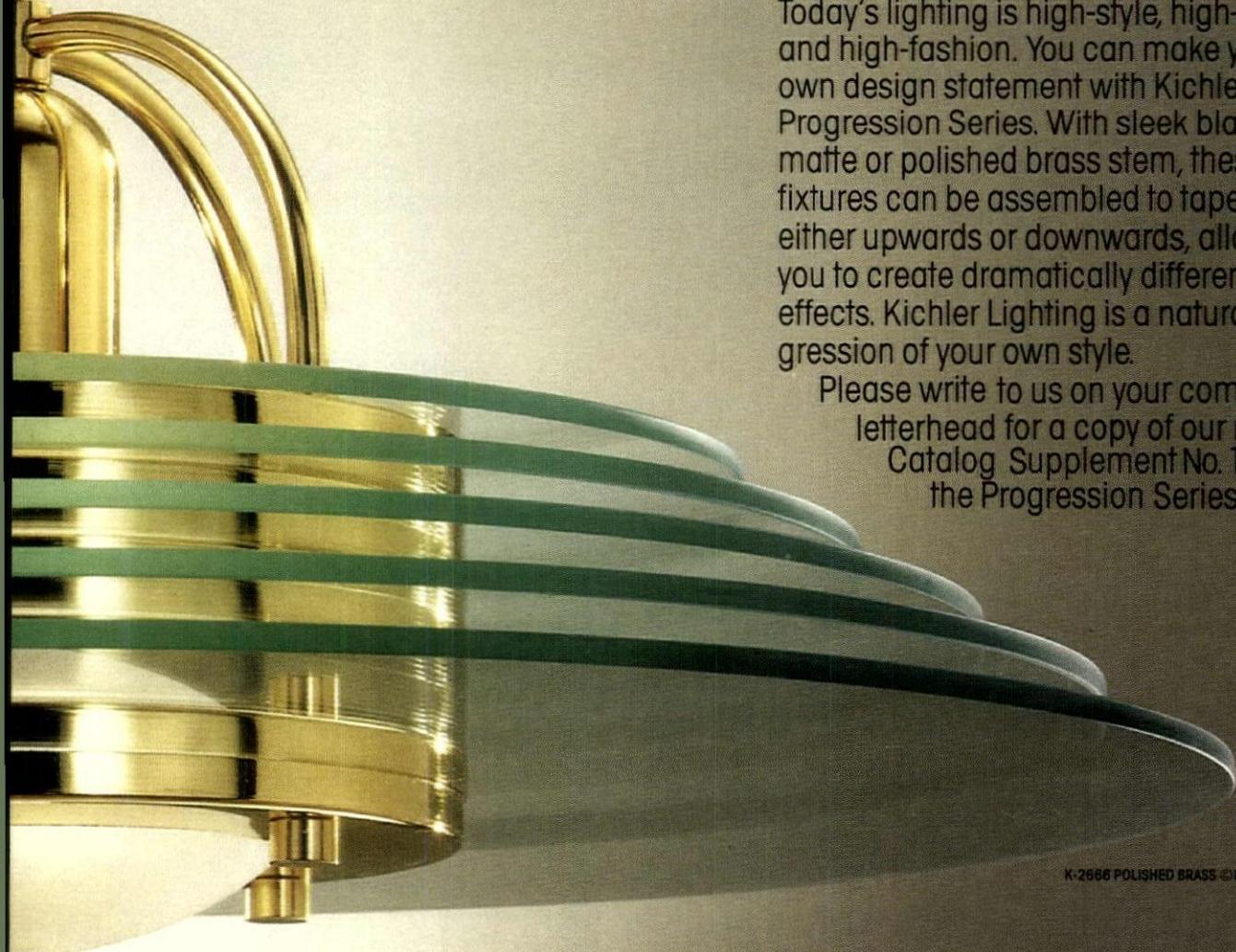
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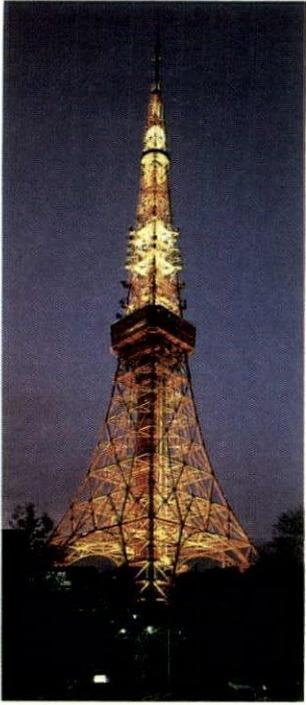
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A LIGHTING ABROAD

SEASONS' GREETINGS: High-pressure sodium lamps (top left) provide a warm glow in winter. Metal halide lamps (right) furnish a cool cast in summer. In a view from the foot of the tower (below) note the points of emerald light along the main structure from 40-watt reflector lamps.

DETAILS

PROJECT: TOKYO TOWER

LOCATION: TOKYO, JAPAN

LIGHTING DESIGNER: MOTOKO ISHII, MOTOKO ISHII LIGHTING DESIGN INC.

INSTALLATION/SUPERVISION: TAKENAKA KOMUTEN CO., LTD.

PHOTOGRAPHER: YOICHI YAMAZAKI



BY MOTOKO ISHII
LIGHTING DESIGNER

The author is president of Motoko Ishii Lighting Design Inc. headquartered in Tokyo, Japan.

The 1,092-foot Tokyo Tower was built in 1959 in the heart of Tokyo, and serves as a radio tower, observatory tower and landmark. To mark the 30th anniversary of its construction, the illumination was redesigned and in operation for the first time on January 1, 1989.

Three lamps at each of the four foundations (a total of 12 floodlights) light the section from the ground level up to the observatory.

On the roof of the five-story Tower Building, 84 floodlights illuminate the structure upwards approximately 330 feet.

Around the observatories, 165 20-watt lamps have been installed. The section above the observatories is illuminated by floodlights set at every two stories of the 27-story tower.

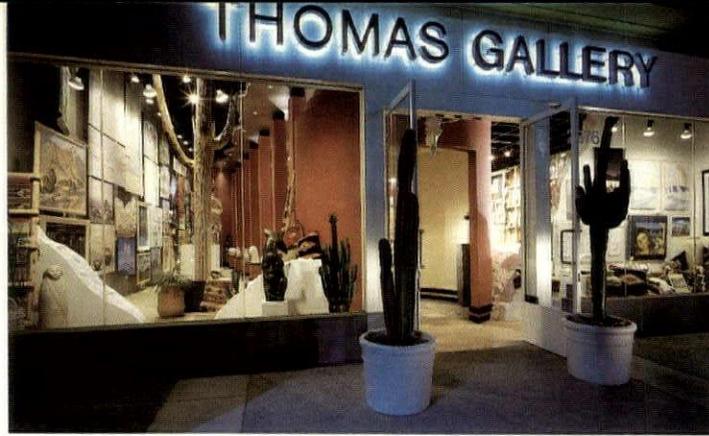
The light sources are changed twice a year: 1,000-watt metal halide lamps are used from spring to summer; 1,000-watt high-pressure sodium lamps, from autumn to winter.

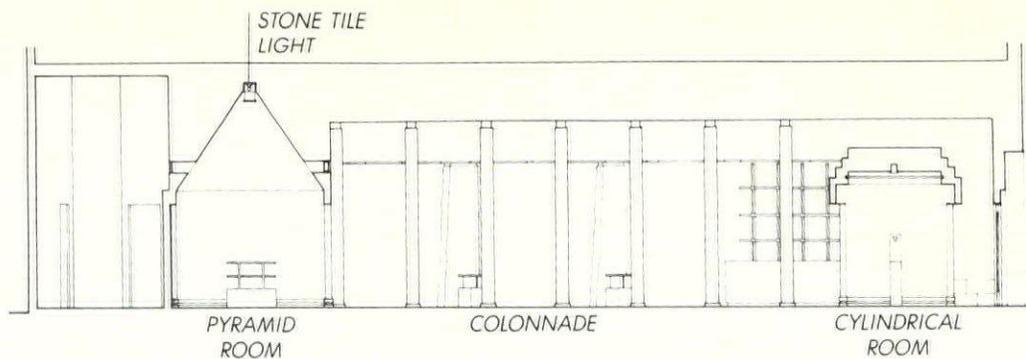
In addition, 524 40-watt incandescent reflector lamps are positioned along the main structure from the foot to the top of the tower emitting light the shade of emerald green.

A combination of narrow, medium, and wide beam spreads are used. ■

PHOTOS BY YOICHI YAMAZAKI







Art Oasis

Lighting to sell is combined with Southwest styling in Tustin, CA's
Thomas Gallery

BY WANDA JANKOWSKI
 EDITOR

Our design recognizes the difference between galleries where people go to view art, and retail galleries where the objective is to sell," says William Hendrix, Hendrix & Hill, Chicago. With his partner, Timothy Hill, Hendrix designed the retail Thomas Gallery, in Tustin, CA, which began operation in the summer of 1989.

Strong architectural features, and an unobtrusive yet flexible lighting system are what the designers used to meet their two major challenges: to make the 2,750-square-foot gallery seem larger than it is; and to establish an environment reflective of the U.S. Southwest, the region from which the artwork comes.

"Though we didn't use primarily custom or one-of-a-kind fixtures, the lighting design does accentuate architectural elements in dramatic ways," Hendrix says. "Each area of the gallery has a different kind of lighting associated with it."

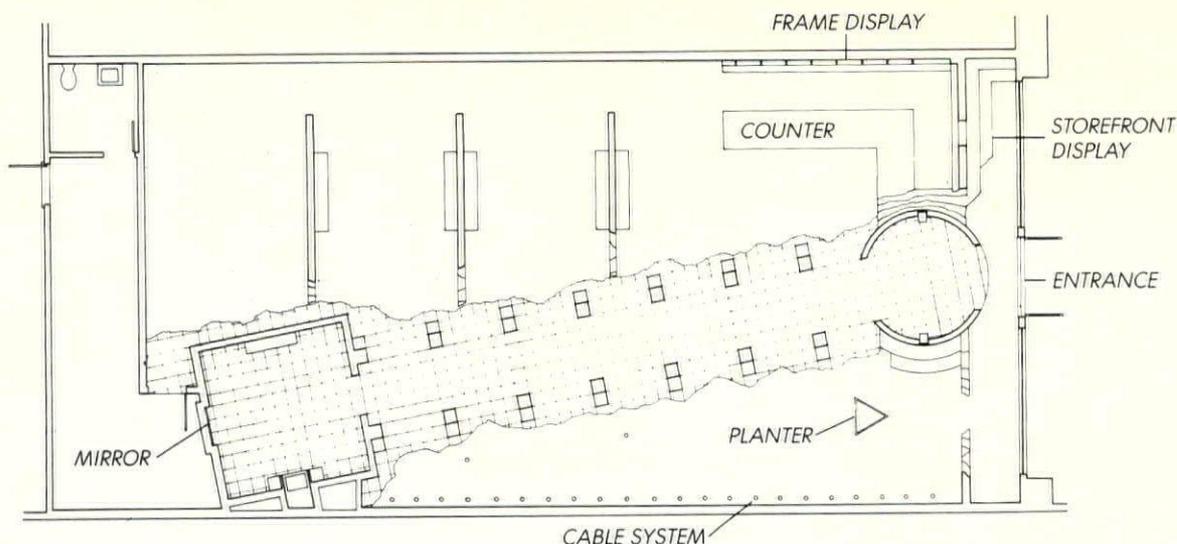
The space has three basic components:

- a cylindrical, freestanding entry room with an adjacent display of frame samples

CARPET, CONCRETE, AND COLONNADE: Thomas Gallery (above left) is located in a pedestrian mall. The gallery portion of the shop (left) includes a formal, carpeted area divided by a colonnaded corridor from a raw, concrete floored space,

PHOTOS BY DAVID GLOMB





SILVER SKY: The corridor is uplit with column-mounted sconces. The recessed downlights in the silver-painted ceiling illuminate the displays at the exterior foot of each column.

- the main artwork display areas, organized by a diagonal colonnade
- a square viewing room at the rear

Since the gallery is located in a pedestrian mall, a circular entry room serves as a transition point for the visitor from the busy exterior to the gallery's world of the Southwest. Trickling water from a pair of slender, vertical metal fountains—one on either side of the room—provides a sense of coolness and repose. These are complemented by the earthy tones of the freestanding structure and the granite floor tiles.

"The primitive geometrics of this terminal point combine with the red color and fountains to reinforce in an abstract way the Southwest theme prevalent in the works displayed," Hendrix says. Basic geometric shapes and the Country Red color are some of the elements repeated throughout the gallery.

The entry room is illuminated with a single recessed R 20 50-watt downlight on reostat. The fixture's beamspread aligns with the circular perimeter of the room as the light reaches the floor. An uplight with a T-3 350-watt tungsten-halogen lamp has been surface-mounted atop the cylindrical room to emphasize the freestanding nature of the form.

Adjacent to the entry room is the cash register area. Behind white counters is a striking wall-mounted display of 1,200 frame corner samples organized in a grid-like structure.

Incandescent PAR 38 150-watt lamps in track fixtures bring out the varied colors and textures of the samples. The black grid system on which the fixtures are hung is also continued through a portion of the main gallery.

"One of the reasons we went with the track is, of course, the flexibility it offers in adjusting the light to suit the purpose at hand. The owner will be changing displays regularly. He will also have special exhibitions," Hendrix says.

"The gallery's main space is organized about a central diagonal colonnade, which splits the space into two primary display areas," Hendrix explains.

The corridor formed by the colonnade, however, is set apart by materials and lighting from the display areas on either side. The floor between the columns is covered with granite tiles. The corridor is indirectly lit with wall-mounted sconces containing MR 11 20-watt low-voltage lamps that cast pools of light up onto a 14-foot high, silver-painted ceiling.

"The fixtures wash the silver ceiling to create a

CUSTOM FURNISHINGS

SIDE LIGHTS

HENDRIX & HILL HAS A sideline specialty in furniture design, and custom designed several pieces for

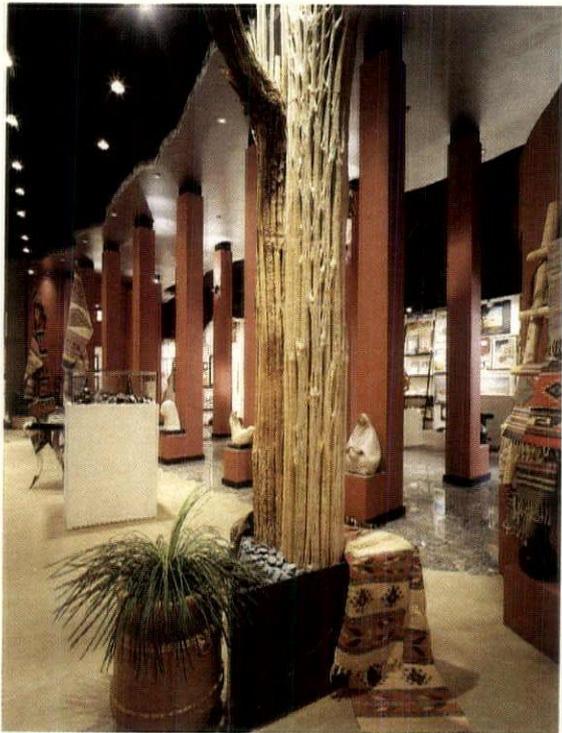
the Thomas Gallery.

For example, the stools at the payment counter and the self-circulating fountains in the entry room have been made of steel plates bent and welded together, with crossbars and

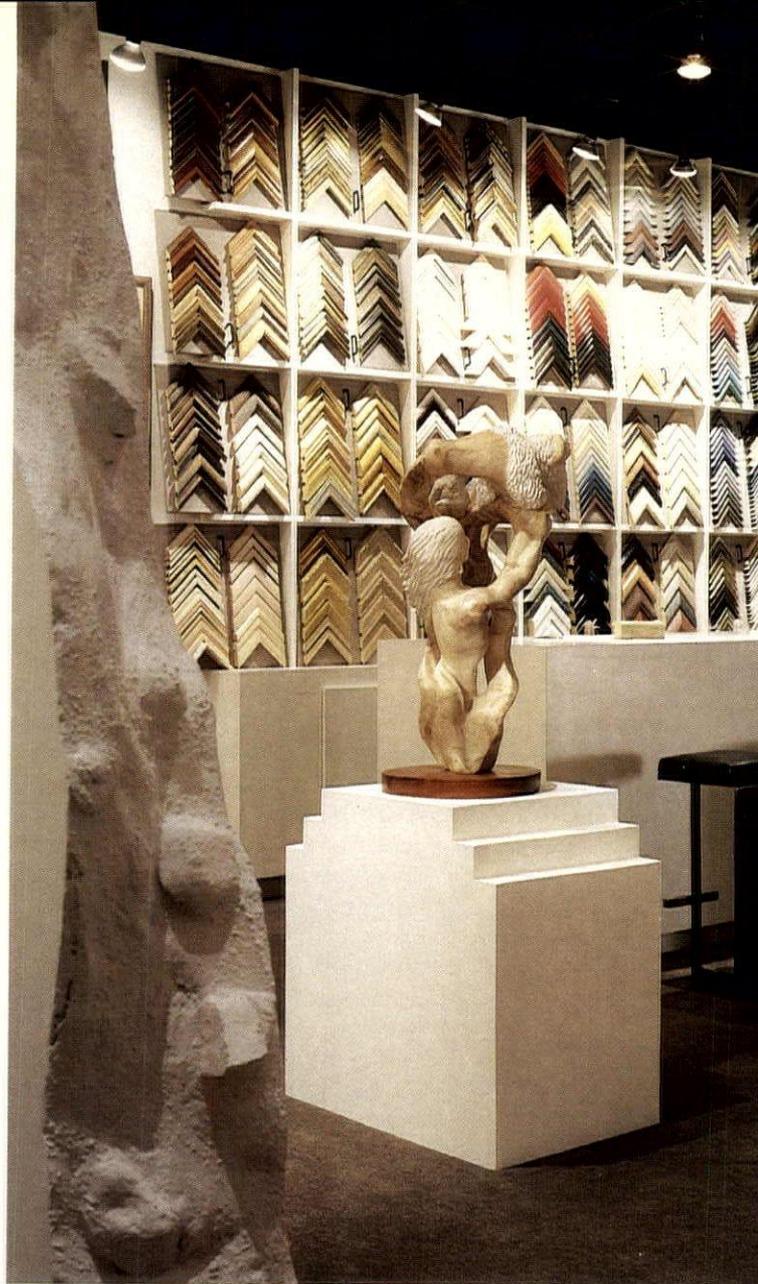
reinforcements left exposed.

"We just ground off the welds and clear-coated the steel to create a rustic look. It makes you think of machinery that's sitting out in the desert like an old train engine in a ghost town," Hendrix says.

A focal point in the front portion of the main display area is the two 17.5 foot cacti bound together and placed in a custom designed base.



LIGHT AND SHADOWS: A cacti display (above) is one of several Southwestern U.S. theme elements. A striking track-lit frame sample (right) is near the gallery entrance. **NOTE:** Shadows at the tops of highest-hung paintings in some photos are caused by improper hanging of some paintings for the photo shoot. The paintings have since been adjusted.



pattern that makes it look like an iridescent sky," Hendrix says.

The "silver sky" extends beyond the columns and ends in ragged edges, Hendrix says, "to create the illusion that a piece of sky has been broken off and shoved into this space, with columns supporting it.

"The colonnade area is indirectly lit, and the art display areas on the left and right of it are directly lit, so the visitor's attention is always drawn toward the artwork and away from the colonnaded corridor."

The halogen R 20 50-watt downlights recessed above the colonnade actually are focused to illuminate the small displays located at the base of the exterior side of each column.

The exposed ceiling over the display areas on the left and right of the colonnade is 18 feet high and has been painted black to create the impression that the "silver sky" is floating.

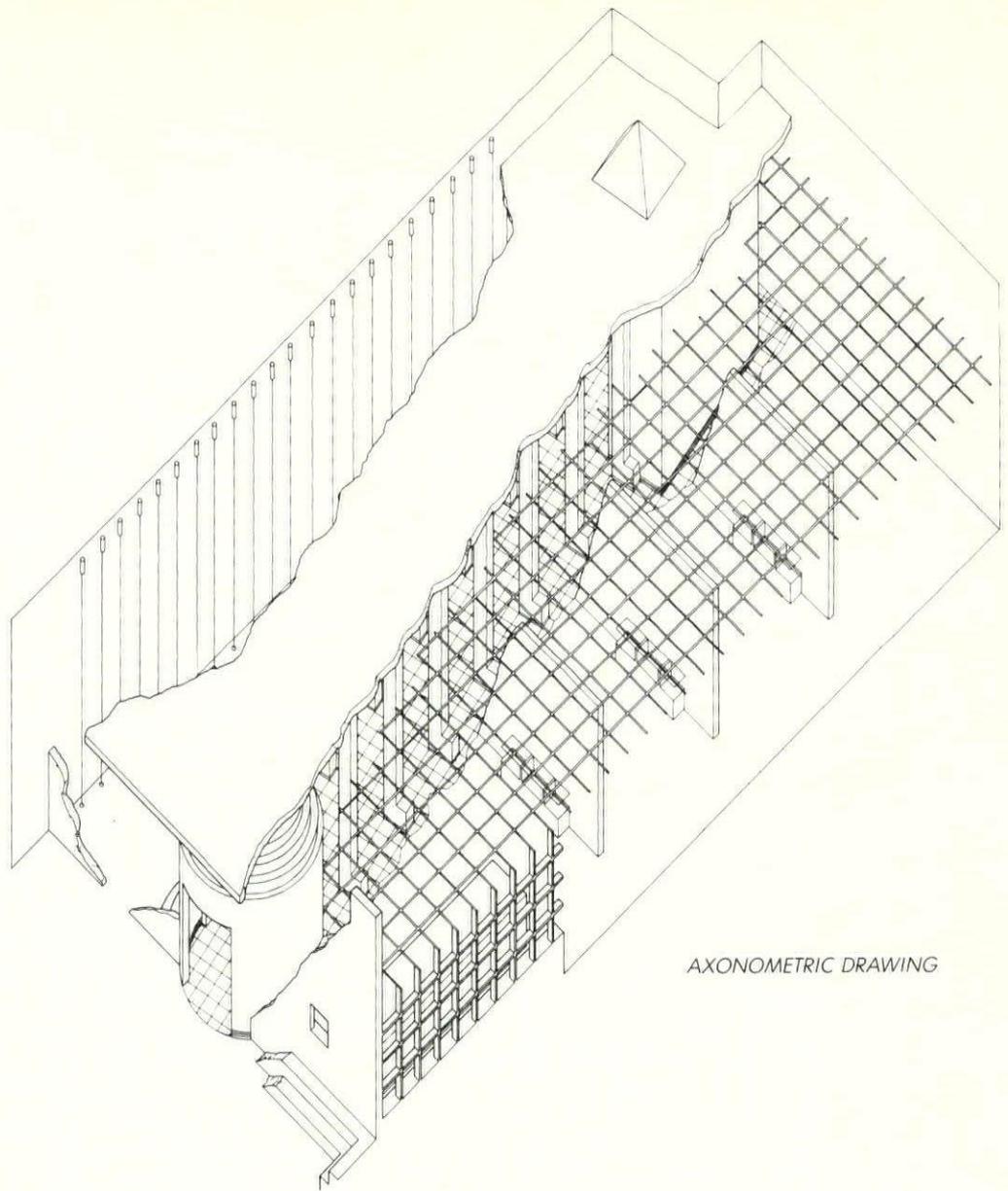
To the right of the colonnade are white walls,

grey carpeting, and a straightforward presentation of art. A metal grid system, suspended 12 feet from the floor, holds adjustable incandescent fixtures with PAR 38 150-watt lamps that highlight wall-mounted artwork, sculptures on freestanding pedestals, and art mounted on white partitions that have ragged edges, where they meet the colonnade.

"The diagonal interjection of the colonnade causes an erosion of the surrounding elements and prompts the look of crumbling walls, floor, and ceiling at their juncture, thus evoking images of the rugged nature of the Southwestern landscape," Hendrix says.

To the left of the colonnade, the floor is concrete, and the walls have been left raw. The art is displayed on a system of floor-to-ceiling cables, which are positioned 6 inches away from the wall.

"This is a means for displaying more significant paintings, allowing them to seemingly float



AXONOMETRIC DRAWING

away from the wall," Hendrix says. A single pipe holds adjustable PAR 38 150-watt lamps in track fixtures to illuminate the paintings.

The colonnade terminates at the entrance to the viewing room at the rear of the gallery. One wall contains a mirror that reflects the colonnade and creates the illusion that it extends to infinity.

The square room's ceiling is pyramid-shaped. The apex of the pyramid has been truncated to create a one-foot square space in which a light fixture has been placed behind a stone tile. The square tile contains quartz, which allows the light to glow softly through it.

Wall-mounted custom fixtures fitted with 20-watt low-voltage lamps also have been designed with horizontal arms that allow them to swing out so light can be projected onto the wall to illuminate art.

All the lighting is on reostat controls, so the owner can adjust the mood for special events and exhibitions.

Hendrix & Hill also designed the sound system. There are 10 speakers suspended from the ceiling in the main gallery, and two more in the back room, all balanced to provide even, directional sound. ■

DETAILS

PROJECT: THOMAS GALLERY

LOCATION: TUSTIN, CA

OWNER: TIM THOMAS

ARCHITECTS: WILLIAM HENDRIX, TIMOTHY HILL AND KIMBERLY DEVLIN, project team, HENDRIX & HILL

LIGHTING DESIGNERS: HENDRIX & HILL with BOB OLAPOUR, TECH LIGHTING

ELECTRICIAN: BAYSIDE ELECTRIC

LIGHTING MANUFACTURERS: TECH LIGHTING (fixture supply and custom fixture design and fabrication); colonnade indirect uplights, wall-mounted arm light; HALO: recessed downlights, surface-mounted uplights, track lights

SOUND SYSTEM: ROGER SOUND LAB: supplier; VIDEO DOCTOR: installer

PHOTOGRAPHER: DAVID GLOMB, DAVID GLOMB PHOTOGRAPHY

Haven On The High Seas

Captivating residential lighting techniques are put to work on a luxury vessel

BY CATHERINE SCHEITTING SALFINO
MANAGING EDITOR

A lighting riddle: When is a residential project not a residential project? Answer: When it's a multi-million dollar yacht that looks like a floating hotel.

Luxurious, high-end residential applications will help the design and construction industries pad a slumping housing market for the next few years, according to recent studies by industry sources. But those same lighting techniques can be readily applied to projects in other settings, to which Grenald Associates Ltd.'s Chip Israel can attest.

Israel, the design studio manager at the lighting consulting firm, illuminated a \$10 million-\$12 million dollar yacht, P'Zazz, owned by Bob and Beverly Cohen of Newport Beach, CA.

"They wanted the interior to be very non-nautical in appearance, and by looking at it you can see they've achieved that," Israel says. "The lighting installation was directly related to the total look. We don't just light a space with four general lights in the middle of the room, which is the usual solution on many boat applications. We really light for function, using the same techniques we would for a residence."

At 127 feet in length, the opulent vessel, which was decorated by Los Angeles-based Intra-Design and interior designer Mike Kluppel, stylishly carries many interior details expected of a high-end residential project on land.

"If we had a wall with artwork, we would light the artwork," Israel says. "We also accented the sculptures

PHOTOS BY NEIL RABINOWITZ





ACCENT ON LUXURY: The "Love and Friendship" sculpture in the foyer (above) stands out with 20-watt, low-voltage adjustable accent lights. Recessed downlights with 20-watt MR 11 lamps are installed directly above a table in the main salon (above, top right). Recessed downlights illuminate the vessel's "Black Stateroom" (above, bottom right).

and smaller areas of interest."

Israel added drama by lighting architectural and design elements, whether it was the stainless steel fireplace, Australian lacewood walls, or leather-covered tabletops.

Upon walking through the main entry, guests aboard P'Zazz immediately know it's not the average seafaring boat. Highly-polished, etched granite floors lead to the foyer area, where 20-watt, low-voltage MR 11 adjustable accent lights focus behind and in front of the bronze sculpture "Love and Friendship."

"We didn't accent the top or back of the sculpture because we wanted the wall to be a background for the piece," Israel says. "The sculpture clearly stands out this way."

MAIN ATTRACTION

In the sprawling main salon, the recessed fixtures are mounted to light the Cohens' original artwork that is built into the curved walls. Accent lighting for the tables is provided by miniature recessed adjustable fixtures, which contain 20-watt MR 11 lamps that have a 10-degree beamspread. General lighting for leather seating areas is achieved with miniature recessed fixtures that use 20-watt 1141 frosted miniature A lamps (similar to car taillight lamps). Art deco-



ish wall sconces complete the look and add supplemental lighting to the space.

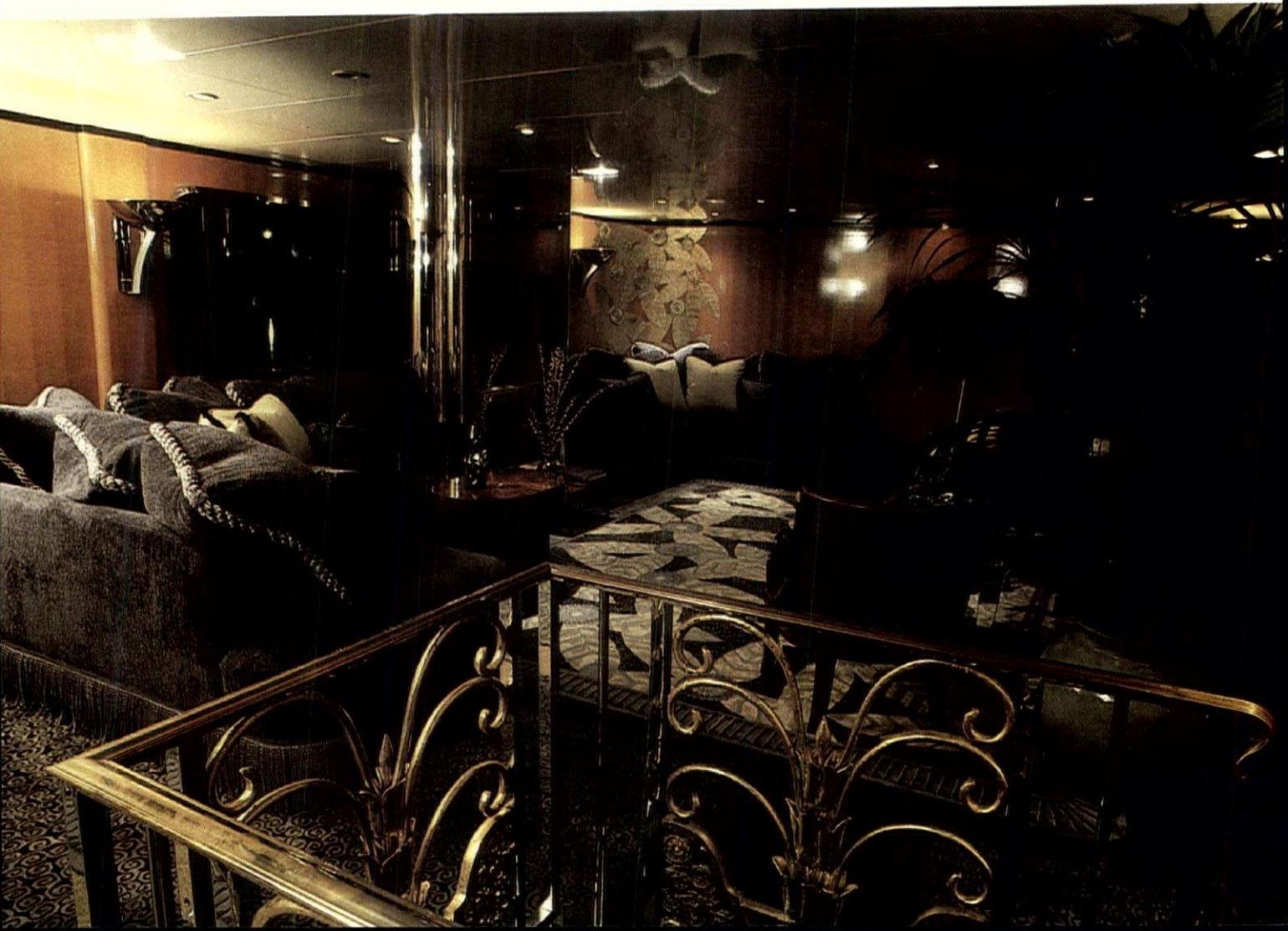
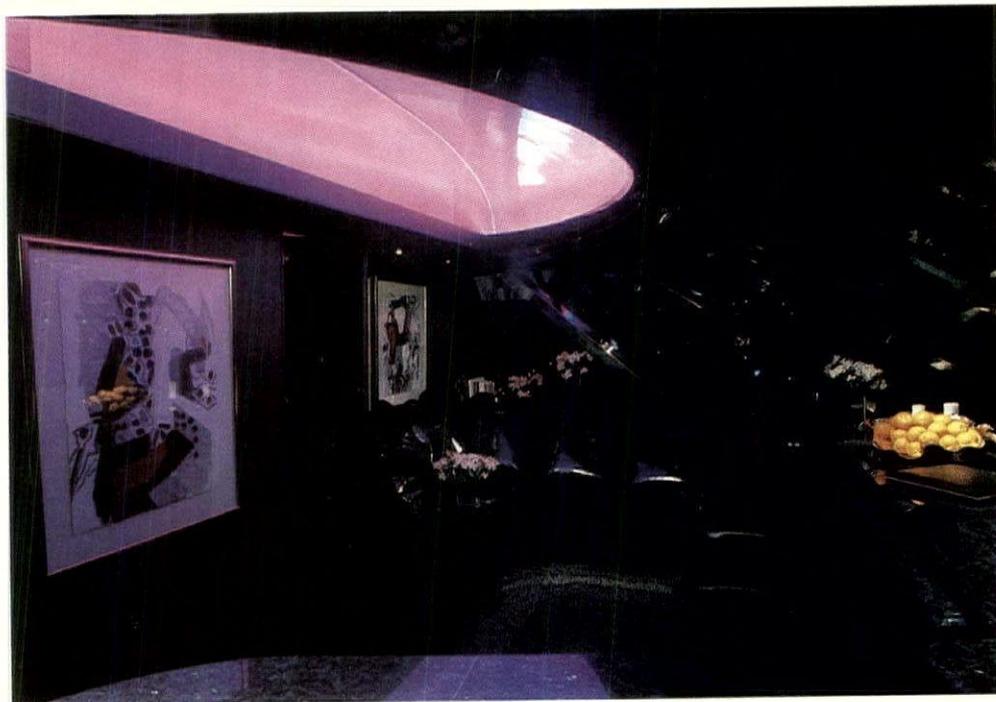
The lights here are on a four-scene, preset dimming system so that the Cohens can adjust the illumination to create various moods, Israel says. For an entertainment scene, the system provides a fairly high overall light level. Another scene offers a more dramatic setting when the general lights are diminished and only wall-washers and accent lamps are focused on the tables and the face of the fireplace, he says. All the lights are fully illuminated for an emergency setting.

"This was a very straightforward project once we knew where the furniture was going and where all the functions would take place," Israel says. "This is the typical lighting format on a large, custom residential project—the interior designer knows where the furniture should be placed and the lighting is designed to be dead-on oriented with it."

Working within such exact margins limits the flexibility of the lighting designer, Israel says, but it also puts the pressure on making sure the job is correctly designed from the start.

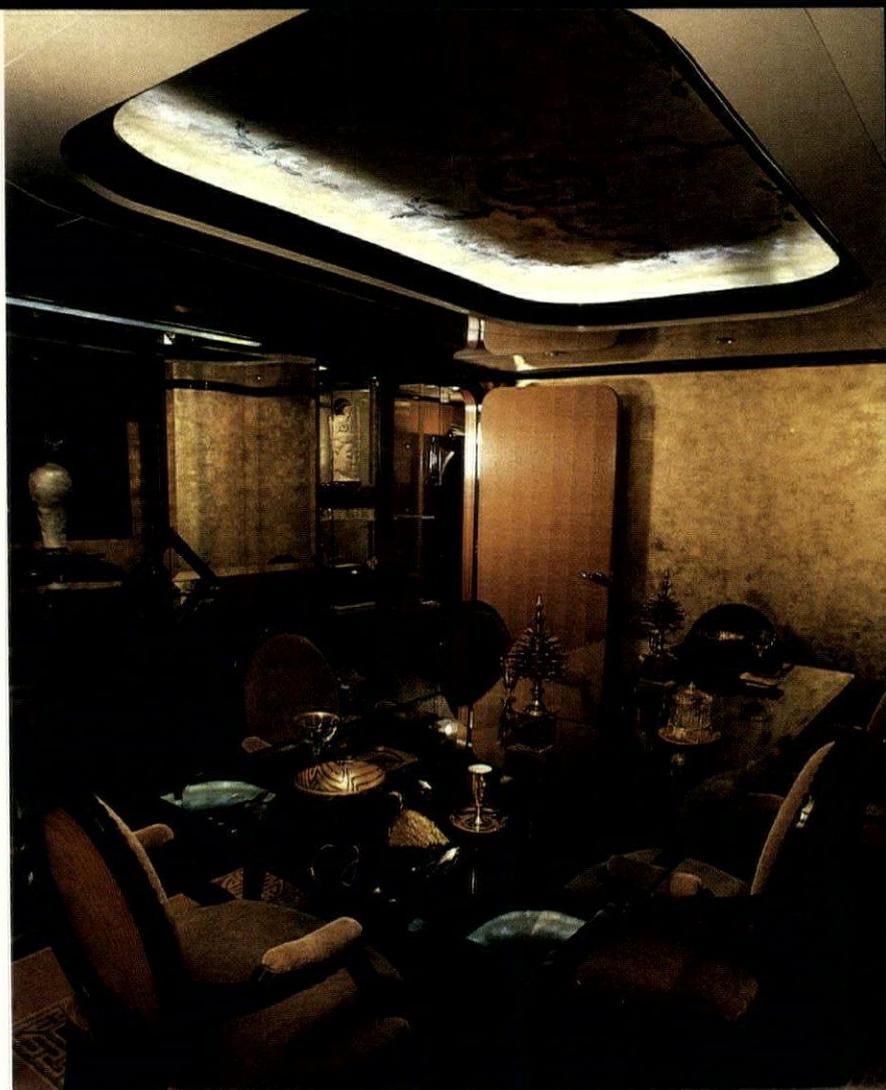
For instance, he says, lights in the main salon have been installed right above one of the ta-

THE NON-NAUTICAL LOOK:
Tables in the main salon (opposite page) are accented by PL 9 low-voltage spotlights. General lighting for the space (below) is achieved with 20-watt 1141 frosted miniature A lamps. The black leather and granite lounge (right) takes on a dramatic look with dark blue/violet and reddish-orange neon, which is concealed in a recessed cove.



“This is typical of a residential project where the interior designer says where the furniture should be and the lighting must be dead-on oriented with it.”

—CHIP ISRAEL



A GOLDEN GLOW: Gold-leaf walls in the dining room (right) glow with 1141 A lamps and recessed neon cove lighting.

TECHNICAL CONCERNS ON A LUXURY CRAFT

SIDE LIGHTS

LIGHTING THE INTERIOR of a yacht may use many of the techniques of a residential application. But, says Grenald Associates' Chip Israel, the technical implementation varies considerably.

On the P'Zazz project, the limited recess depth for ceiling fixtures had to be considered when choosing lamp types. Also, since the ceiling plenum (the space between the top of the ceiling and the bottom of the floor above) didn't allow for free air flow due to fiberglass beams, heat from large fixtures would have built up, possibly causing a fire. So, for safety, Israel chose remote transformers for the fixtures. But another concern for Israel lay in the power source since he was provided with 120 volts.

“The owners run a full-time generator,” Israel says. “So we literally stepped down the 120 volts through large remote transformers that can be built into the furniture or into the walls. Then we

just had low-voltage wires running up to the ceiling to the lights themselves.”

Since this limited Israel to the size of the lamp wattage, he used more fixtures in order to attain the same lighting effect. Low-voltage fixtures were chosen since they tend to be small, but, typically they cause a glare problem. Israel decided to paint the inside of some fixtures black and then inserted a high performance reflector to get more light out of the fixture.

“We also tried to limit the different types of lamps used on the project for storage and maintenance reasons,” Israel says. “The owners really have to carry stock with them, so these very small lamps are easy to store. Plus, as they travel around the world, if they do need to buy a lamp, they won't have to worry about buying 30 different kinds.”

For corrosion protection, Israel used custom cast stainless steel fixtures on the exterior of the yacht.

All of the lenses were made of glass, not plastic, because they are sturdier and offer more thermal protection.

EXOTIC BATHING: The "Black Stateroom's" bath (below) features an eye-catching mirror that is lined with snakeskin. The room is lit with directional downlights and decorative wall sconces.



bles. If the object is moved 6 feet in any one direction, there would be a pool of light on the floor and nothing illuminating the tabletop.

DINING LIGHT

The golden dining room is lit with a series of different luminaires. Porcelain and ivory art objects along a windowed wall are lit with 20-watt recessed adjustable fixtures that contain MR 11 accent lamps. The gold-leaf walls are illuminated with 1141 A lamps and a recessed cove with concealed neon indirectly lights the room.

A 3,000 degree Kelvin, custom-made white neon tube wraps continuously around the cove, recessed behind the lip so diners don't actually see the lamp. The neon tube, made of 15 millimeter glass, is also on a dimmer.

"We used the cove lighting because of the glass tabletop," Israel says. "This way, the bright reflections are minimized for the diners. We would have liked to put a downlight or accent light in the cove, but there wasn't any recess depth to do it."

Israel says the ceilings of P'Zazz are only about 7 feet high, which means all the lighting had to be recessed.

"Anything that projects from the ceiling brings up the problem of it swinging back and forth on rough seas, or people hitting their heads on it," Israel explains. "Also, if you mount track in there, most spaces would appear very cluttered visually."

SUITE DREAMS

The brilliant interiors are highlighted further in the master suite. Here, the headboard—a gold-leaf, etched-glass mural—is lit with T8 fluorescent lamps that are recessed around the edge and use a dimming system. To illuminate the center of the panel and bring out the gold leaf, Israel installed a row of 20-watt adjustable accent lamps in the ceiling, which are aimed at the center of the glass. On the other side of the glass sits a whirlpool tub made of solid onyx.

A separate switch is used for the recessed lamps on either side of the bed that are aimed to be used as reading lights. The decorative table lamps provide very little functional light, Israel says, and are used more as accent pieces.

Recessed lamps are installed around the perimeter of the room to light artwork, the desk, and a lounge area that includes a dressing table inlaid with Mother-of-Pearl. Israel says fixtures were not installed in the middle of the suite's ceiling because the panel above the bed is removable in order for large objects to be lowered into the yacht.

STATELY ROOM

A change in the placement of artwork in the "Black Stateroom" made Israel cringe when he saw how it affected the lighting.

"Two pictures were going to be placed over the bed, but the owners ended up putting a mirror there and moving the artwork to either side of the headboard," Israel says. "This change made the lights glare into the mirror, which is unacceptable."

The lighting has since been fixed, with Israel removing the wall-washer trim on the fixtures to



turn the lamps into downlights. He eliminated the hot spot by coating the inside of the fixture with flat black paint.

The stateroom's bath takes on quite an exotic look with its snakeskin mirror. The room is lit with 20-watt recessed directional downlights, but decorative wall sconces provide the main lighting, Israel says.

"From a lighting point of view, it works very well because you get diffused light from the sconces, which renders faces well, and then the light bouncing off the ceiling provides general light."

Although the project called for precise lighting techniques, Israel says this did not prevent him from having fun with creative illumination in certain areas.

In the lounge, which is done in black leather and granite, Israel provided drama with a cove that illuminates the area with custom neon in two colors—dark blue/violet and reddish-orange—for different moods. The individual neons can be dimmed independently. Low-voltage, long-life strip lights which use 1-watt lamps, 2 inches on center, are used under the sofa and bar. Little 20-watt MR 11 monopoint track heads provide accents for the flowers displayed on top of the bar.

Outside, Israel installed 20-watt MR 11 adjustable accent spotlights that aim into the whirlpool tub, which also has a decorative fountain built into it that's illuminated at night.

Israel also installed marine grade high-powered quartz fixtures underneath P'Zazz's

swim dock, both for safety and fun.

"When the yacht is moored, they can turn the lights on for safety when they're swimming," Israel says. "But, since the lights attract fish, it's fun for them to just sit and watch all types of fish swim right up to the boat."

Israel says the Cohens, who are co-owners of the Beverly Hill Four Seasons Hotel, went for top quality, custom-made features because the boat is more than just a showpiece for them.

"They are avid boaters who use their yacht to cruise all over the world," Israel says. "It was important that the lighting be flattering, but also as functional as possible. If I were to do another yacht, and if it had the same interiors and budget as P'Zazz, I would do it the same way." ■

DETAILS

PROJECT: P'ZAZZ YACHT

LOCATION: NEWPORT BEACH, CA

CLIENT: ROBERT and BEVERLY COHEN

LIGHTING DESIGNER: CHIP ISRAEL, GRENALD ASSOCIATES LTD.

INTERIOR DESIGNER: INTRADESIGN; MICHAEL KLUPPEL

SHIPYARD: DELTA MARINE

PHOTOGRAPHER: NEIL RABINOWITZ, WATERLOG & IMAGES

LIGHTING MANUFACTURERS: SYLVAN DESIGNS: Alesco miniature recessed fixtures for downlights, adjustable accents, and wallwashers; GENERAL ELECTRIC: MR 11 lamps, 1141 IF lamps, PL 9 spotlights; NEW HORIZONS: under cabinet fixtures, 3001 Series strip lights; PHILIPS LIGHTING: Octron T8 fluorescent lamps; CSL: monopoint track heads; BIEBER: stainless steel naval fixtures; LUTRON ELECTRONICS: Graphic Eye wallbox dimmers and four-scene presets; EXPRESS LIGHT: vanity lighting in master suite; ZIGGARAT: decorative lamps; CHAPMAN LIGHTING: decorative hinge lamps; SPECTRUM: bathroom sconces; WALTER PROSPER: salon sconces; CUSTOM-MADE desk lamp.

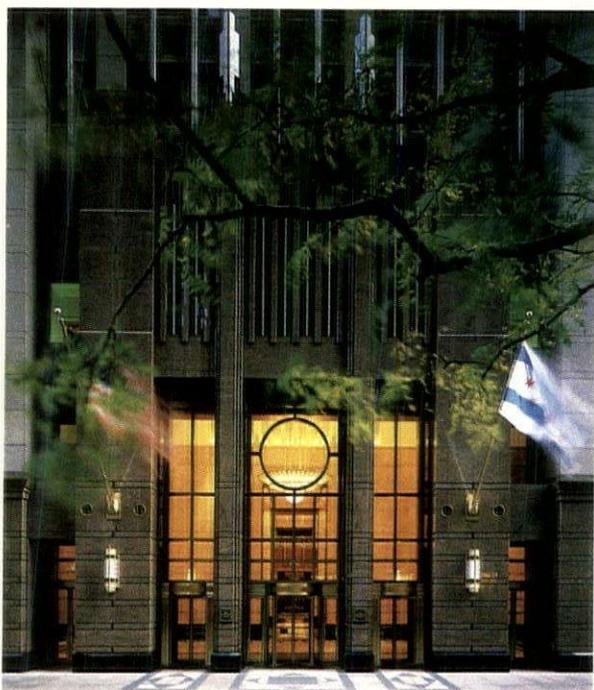
KEY QUOTE: "We really light for function, using the same techniques we would for a residence."—Chip Israel

SUITE STUFF: The etched-glass headboard of the master suite (above) is lit with T8 fluorescent lamps recessed around the piece's edge. General lighting is provided with 20-watt adjustable accent lamps.

Up Scale

AT&T Corporate Center's grand lobby demands classically proportioned luminaires

BY CHARLES LINN, AIA
EXECUTIVE EDITOR



A return to the highly finished, classically proportioned volumes of open space that people associate with grand lobbies of yesteryear demands luminaires of equal grandeur. Such are the huge chandeliers and sconces that were custom-built for the lobby of AT&T's new corporate center in Chicago.

The design of the fixtures was a collaboration between designers at Skidmore, Owings & Merrill, (SOM), Chicago, and lighting designers Charles Stone and Barry Citrin, Jules Fisher & Paul Marantz, Inc., New York. Determining the geometry and scale of the luminaires to such a large scale setting was one of the more difficult aspects of the project.

"The main thing is not to be afraid to make the fixtures as big as they need to be," says lighting designer Charles Stone. "It's a classical, double cube-proportioned space. Once you remember that you're doing classical proportions, it gets easier to scale things up to a size that's big enough. And after the design

PHOTOS BY GARY KNIGHT

IN FROM THE COLD: The warm glow from the interior lobby entrance on Monroe Street (above) is in striking contrast to the cool night lighting of the building's exterior (see page 50).



CUSTOM CLASSICS: Custom-made sconces (left) and 500-watt downlights illuminate the Franklin Street portion of the lobby. The Monroe Street lobby (right) is graced by a 13-foot diameter chandelier made of bronze and art glass, and two 8-foot diameter chandeliers which flank it. A series of compact fluorescent strips are concealed in architectural niches close to the ceiling.



WORKING WITH BRONZE

SIDE LIGHTS

THE SUCCESS OF THESE COMPLICATED fixtures is a tribute to both the detailed drawings executed by Fisher Marantz, and the artisans at C.W. Cole & Company who fabricated them. Continuous communication among the architects, lighting designers, and the manufacturers was essential, they say, for determining such things as the structural loads, and whether the photometric performance and finish of the luminaire was satisfactory.

Other logistical considerations included the disassembly, crating, and shipping of the fixtures from Cole's fabrication shop in Los Angeles to the construction site in Chicago. Representatives of the electrical contractor visited the shop during the fabrication process so they could better understand how the fixtures would be assembled and installed upon delivery.

[1] Heliarc welding is used to join standard sections of extruded architectural bronze. The bronze

pieces must be cut to exact length and laid out at precise angles before being welded together. All of the welding takes place on the back of the extrusions, so joints are concealed from view.

The satin finish [2] is hand-applied by artisans using abrasive pads [3] before lacquer is sprayed onto the bronze to prevent it from tarnishing. Bronze begins tarnishing in a matter of hours, so a crew of up to eight people quickly performs a final rubbing immediately before the lacquer finish is sprayed.

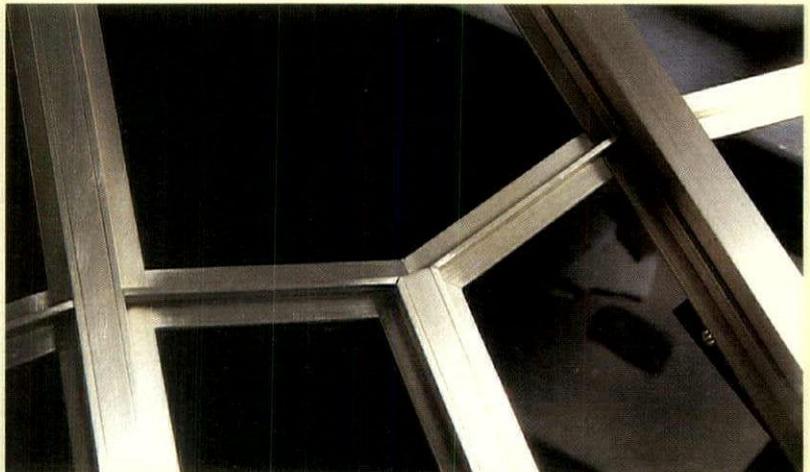
The large, two-tiered chandelier is hung from a forklift [4] to make sure that the chandelier balances properly. This also enables the designers to check sight lines, ensuring that the white-painted steel inner structure will not be visible from beneath once the chandelier is installed.

An artisan installs art glass in one of the sconces [5]. The glass is held in place by metal stops, but is cushioned by silicon beads to keep it from breaking due to expansion and contraction. Art glass for the chandeliers was installed on-site in Chicago, once the chandeliers were hung.

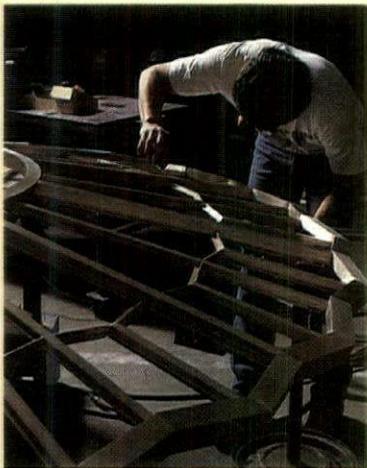
SIDELIGHTS PHOTOS BY MICHAEL URBANEK



1



2



3



4



5

SECTION DETAIL WALL SCONCE

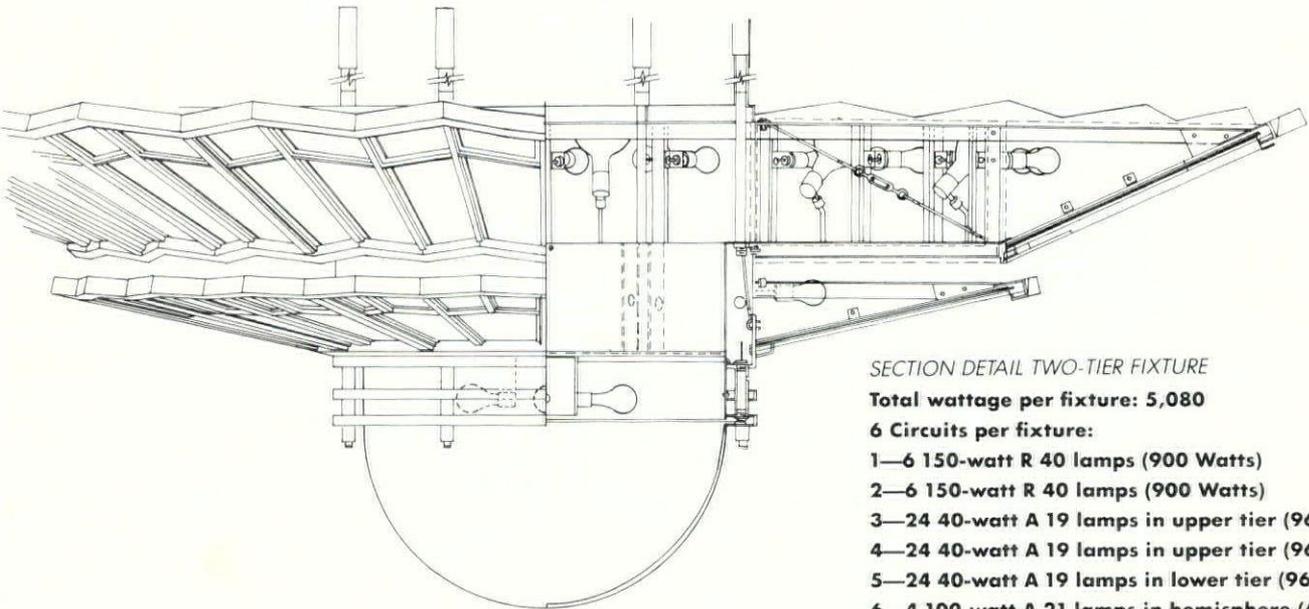
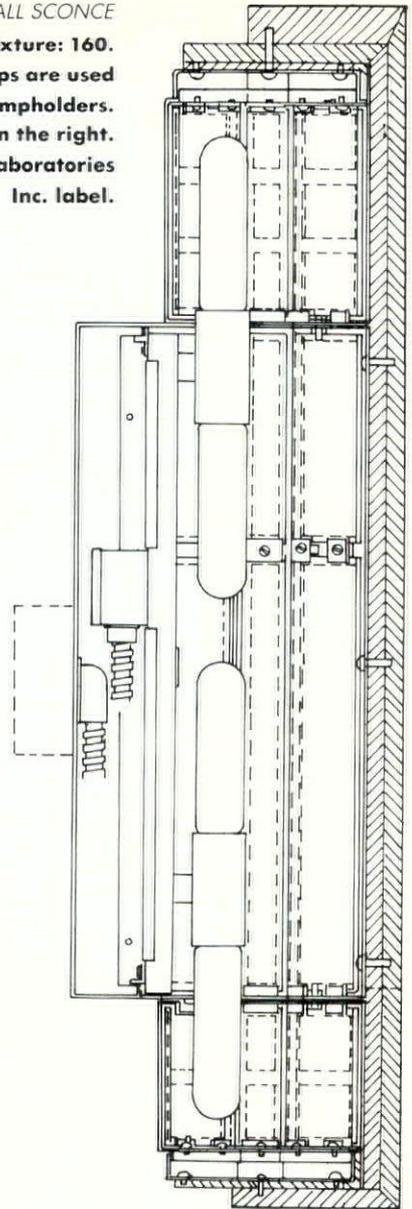
Total wattage per fixture: 160.
Four 40-watt T 10 lamps are used
in medium base lampholders.
Polished fixture face is on the right.
Fixture bears Underwriters Laboratories
Inc. label.

team established an understanding of the proportions, and the grandeur and richness of the materials, locating the chandeliers and sconces was straightforward."

SOM used drawings as well as detailed models of the space as aids in determining both the scale and geometry of the luminaires.

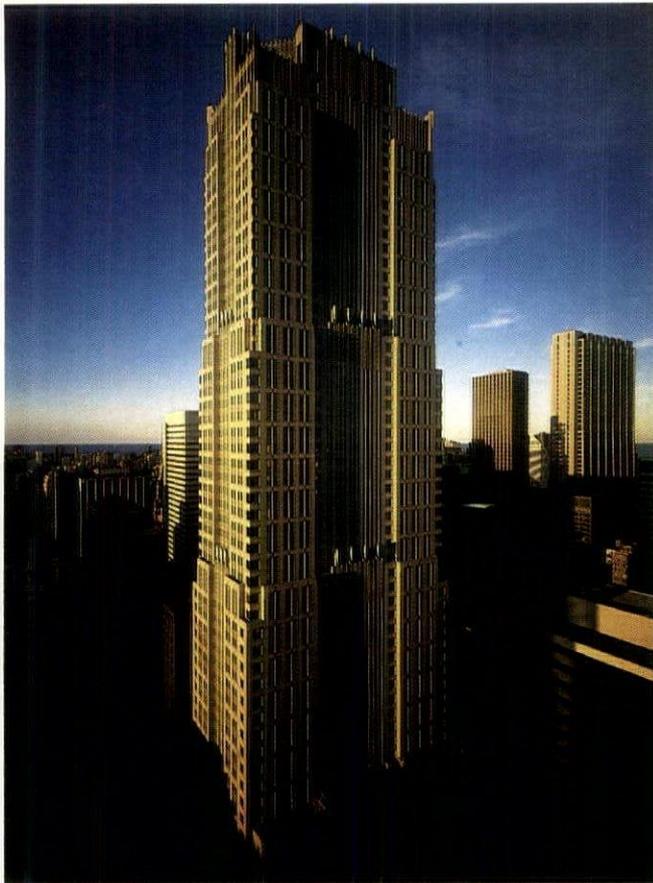
"The models were extremely accurate," according to Stone. "They even took pictures of the marble, got glossy prints made, and glued them to the foamcore model walls, so that they had a realistic, precisely finished model of what the inside was going to look like."

LOOK AGAIN: The wall (below) is actually covered with a Richard Haas trompe l'oeil mural depicting what the continued lobby will look like when the adjoining USG Building is completed in phase two of the project.



SECTION DETAIL TWO-TIER FIXTURE

Total wattage per fixture: 5,080
6 Circuits per fixture:
1—6 150-watt R 40 lamps (900 Watts)
2—6 150-watt R 40 lamps (900 Watts)
3—24 40-watt A 19 lamps in upper tier (960 Watts)
4—24 40-watt A 19 lamps in upper tier (960 Watts)
5—24 40-watt A 19 lamps in lower tier (960 Watts)
6—4 100-watt A 21 lamps in hemisphere (400 Watts)
Fixture bears Underwriters Laboratories Inc. label



NIGHT AND DAY: The AT&T Corporate Center is an attractive addition to Chicago's skyline not only by day, but at night due to metal halide uplighting.

In addition, sections of the chandeliers were mocked-up in steel at full size by the manufacturer for approval prior to final fabrication. These mock-ups were suspended and used by the designers to check "sight lines," or in other words, to determine whether the steel inner-structure of the chandeliers would be concealed by the upper and lower tiers once they were installed in the building.

The richness of materials found throughout the lobby made its way into the light fixtures themselves. The central two-tiered chandelier in the space is almost 13 feet in diameter and weighs about 2,000 pounds. It's crafted of hand-welded, hand-rubbed bronze, and white patterned, laminated art glass. This central chandelier is flanked by two 8-foot diameter, single-tiered chandeliers.

The bronze tiers are anchored at the hub by a 36-inch diameter half-sphere, made of white acrylic, to match the art glass. The chandeliers are backlit by rings of 40-watt A lamps, and also conceal 150-watt R lamps that uplight the ceiling. When relamping of the chandeliers is required, the acrylic domes are unbolted and slid to one side, allowing a maintenance person on a lift to stand inside the fixture and perform the operation.

At 5-feet tall, the T 10 lamped bronze and art glass lobby sconces are of similar grand proportions. Smaller versions of the sconces and chandeliers resembling those in the lobby have been placed throughout the building.

Additional ambient lighting in the lobby is provided by 500-watt quartz downlights recessed between the lobby perimeter and the chandeliers. Architectural niches near the ceiling are articulated by a series of compact fluorescent light strips which provide uplighting. ■

DETAILS

PROJECT: AT&T CORPORATE CENTER

LOCATION: CHICAGO

ARCHITECT: SKIDMORE, OWINGS & MERRILL, CHICAGO

LIGHTING DESIGNER: JULES FISHER & PAUL MARANTZ, INC.

PHOTOGRAPHERS: GARY KNIGHT & ASSOCIATES; MICHAEL URBANEK, *Sidelights* photos, page 48

ELECTRICAL CONTRACTOR: HATFIELD ELECTRIC COMPANY

GENERAL CONTRACTOR: BLOUNT CONSTRUCTION GROUP

DEVELOPER: STEIN & COMPANY

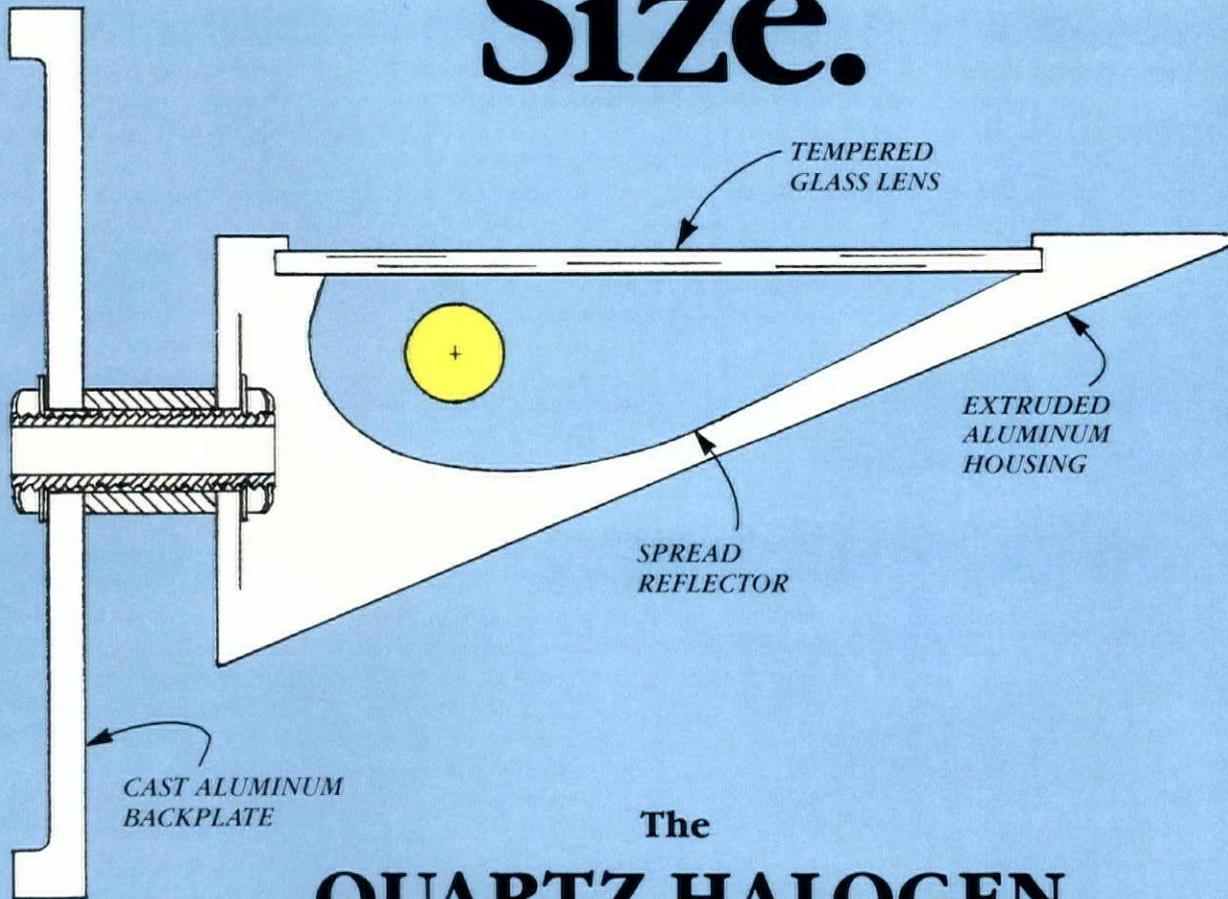
MURAL ARTIST: RICHARD HAAS

LIGHTING MANUFACTURERS: C.W. COLE & CO.: custom chandeliers and sconces; OMEGA: downlights; NORBERT BELFER: compact fluorescent strips

GLASS MANUFACTURER: WISSMACK: art glass

KEY QUOTE: "There is a character to the building in which the chandeliers play an important part . . . Real bronze, real glass made with quality and craftsmanship."—Barry Citrin

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Managing the Cost of Lighting

Getting Lighting Built Right— Part II

BY JAMES R. BENYA
PE, IALD

The author is senior principal and CEO of Luminae Souter Lighting Design of San Francisco. He is on the faculty of the California College of Arts and Crafts, is active in IES and Designers Lighting Forum of Northern California, and teaches lighting design classes for the ASID, IBD, and the American Lighting Association.

Every architect, engineer, interior designer, and lighting designer knows

that lighting is the first and easiest cost cut when a project goes over budget. An especially astute architect once suggested that there is a sense of "temporariness" associated with lighting—a perception that the lighting can and will be improved at some point in the future once a project becomes economically viable. Of course, there is an equal likelihood that a snowstorm will occur in the Sahara.

So despite the growing interest and respect for good lighting, lighting budgets remain proportional to the balance of the building budget and are the first part of the project subject to redesign during "value engineering." In order to preserve a good design, the designer must resort to overt budget management.

LIGHTING COSTS—THE STANDARD PROCESS

Before costs can be managed effectively, they first must be understood.

1. *The manufacturer's cost* of the luminaire includes the manufacturing costs plus overhead, and profit. If the luminaire is made outside the U.S., the price also includes the importation fees.

2. *The sales price* of the luminaire includes the costs, overhead and profit of the manufacturer's representative.

3. *The management price* of the luminaire includes the labor, overhead, and profit costs associated with managing the ordering of the equipment, submitting shop drawings, plus the cost of shipping, receiving, warehousing, and delivering the equipment. Although some

of these are part of the rep's costs, most of the cost of managing the order goes to the distributor.

4. *The installation price* of the luminaire includes the labor, miscellaneous materials, job costs, overhead, and profit of the electrical and general contractors.

MANAGING THE COST

Competitive bidding. Manufacturers use a combination of reduced profits and manufacturing compromises to make lighting products less costly. When the designer confronts the manufacturer with a competitive bidding situation, the manufacturer has the incentive to offer better pricing.

Of course, the larger the order, the greater the opportunity to reduce costs. The prudent designer specifies

ALTERNATIVES FOR PURCHASING FIXTURES

BUY FROM	SERVICE CONSIDERATIONS	PERCENTAGE OF POTENTIAL SAVINGS
Distributor	Distributor and rep backup. Least risk to owner.	10%
Fixture Broker	Limited backup. Greater demands on owner's time.	20%
Manufacturer (Establish National Account)	Local rep and national sales force backup.	15-20%
Turnkey Lighting Services	Complete service.	- 50% (Cost is as much as 50 percent more than conventional route)

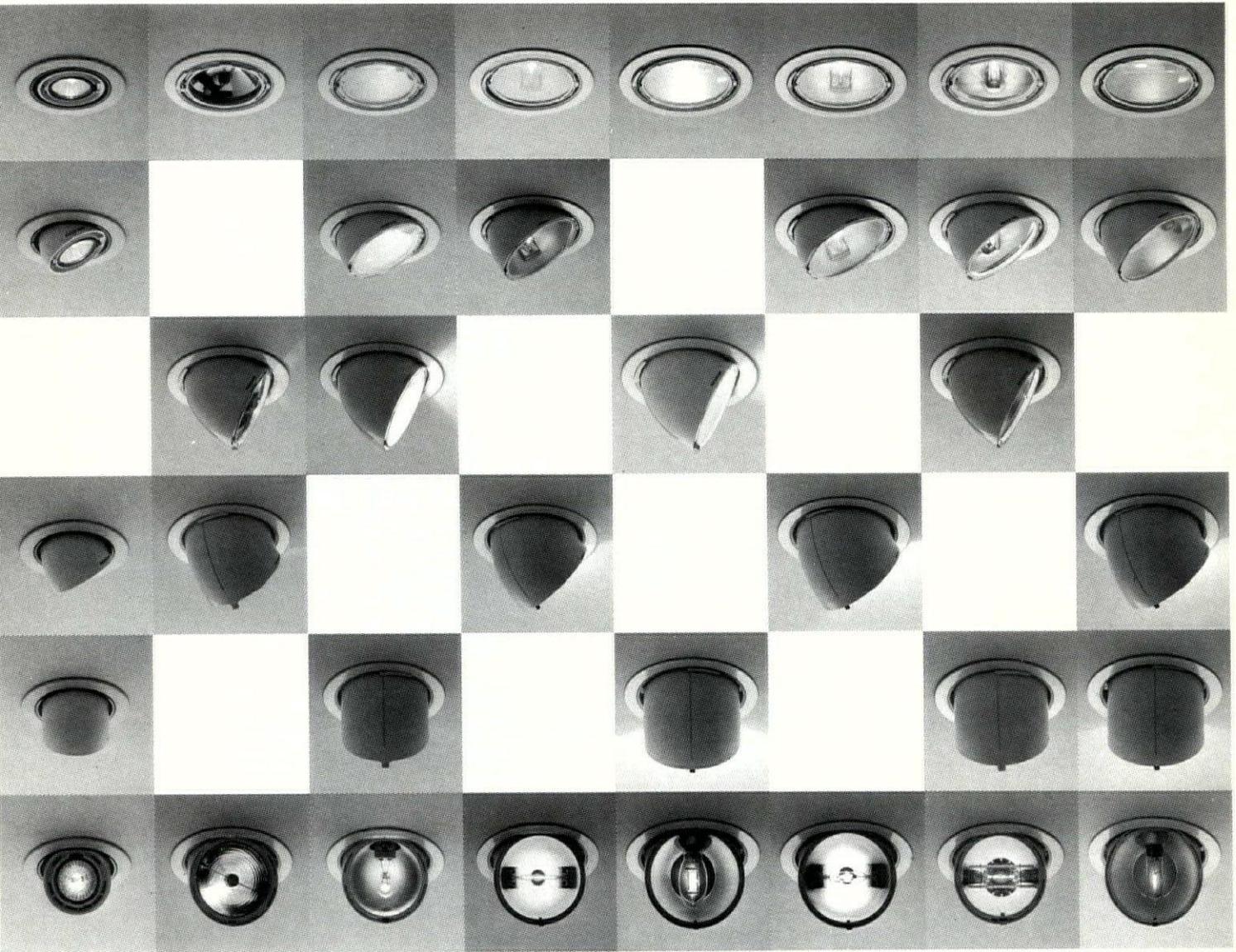
DOWNSPOT

by REGGIANI



PRODUCT
DESIGN
AWARD

Design Fabio Reggiani



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MR11-MR16-35-75W

Low Voltage
Superspot-50W
& Par36 50W

Single Ended
Tungsten Halogen
100W

Linear Double Ended
Tungsten Halogen
100-300W

Metal Halide-Single Ended
100W-Sylvania

HQI-Double Ended
70-150W

Linear Tungsten Halogen
100-300W

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**Standard luminaire
pricing includes
manufacturer,
sales, management and
installation costs**

with packages in mind (see "Getting Lighting Built Right—Part I," *Architectural Lighting*, January 1990, pages 36-38) and minimizes the number of luminaire types to take greatest advantage of additional reduced costs.

Sometimes, luminaires are unique and bidding is impossible. It often makes sense to obtain a guaranteed maximum unit price from the manufacturer prior to working drawings to at least fix the price at a known level. This helps prevent price gouging on sole-source product specifications.

Manufacturer's reps' costs. Manufacturer's reps mark up the cost of luminaires to pay for their business costs. A portion of this markup is the cost of sales. This provides for the representative's work prior to an order being placed, and pays for services including placement of catalogs in specifiers' offices, calling on specifiers, making product presentations, supplying samples, performing computer analyses, submitting quotations, and the like.

The balance of this markup pays for management after the sale. Typical rep markups range from 2-3 per-

cent for a large order to as much as 10 percent.

Reps do not actually purchase luminaires, but are paid a commission by the manufacturer. Their markup includes a profit cushion which gives them some room for negotiating. Like the manufacturer's price, the rep's markup can be managed by competitive bidding.

The highest cost situations occur when reps inflate the manufacturer's price of a sole-source product before adding their markup percentage; this practice is called overage. Most manufacturers require the rep to split the overage, which is virtually all profit. To minimize overage and high markup on a sole-sourced product, designers should negotiate and fix the rep markup prior to working drawings.

Distributor's costs. Distributors actually buy the luminaire from the manufacturer. This makes the distributor directly responsible for placing the order, receiving the shipments, and most importantly, for handling the money and paperwork. Sales tax is added at this point.

The distributor is responsible for any problems with the product, and is financially at risk should either the contractor or the manufacturer fail in the bargain.

On large projects, the equipment is often sent directly from the factory to the job site. Called drop shipping, this is the least costly project type for the dis-

tributor, and on very large projects, the distributor's markup is 5-10 percent. On smaller projects, the markup is higher, and the distributor may actually have to handle the equipment.

Distributors often stock popular luminaires. With the added cost of stocking and warehousing, and the likelihood that luminaires will be purchased in small quantities, the markup is much higher. For example, a 2-foot x 4-foot, three-lamp, 18-cell parabolic luminaire in small quantities from stock might cost a contractor \$125; drop-shipped on a large job, the same fixture might only cost \$85.

The distributor will increase the markup whenever possible to maximize profit. To control distributor costs, it makes sense to either bid competing packages, or in the case of sole-source products, to pre-arrange a fixed percentage during the design process.

Contractor's costs. The contractor buys the luminaires from the distributor and also marks up the luminaire costs to compensate for the purchasing, handling, and paperwork associated with the lighting. Typical material markups range from 5 percent on large competitively bid projects to 25 percent on small projects with hourly or time-and-materials contracts.

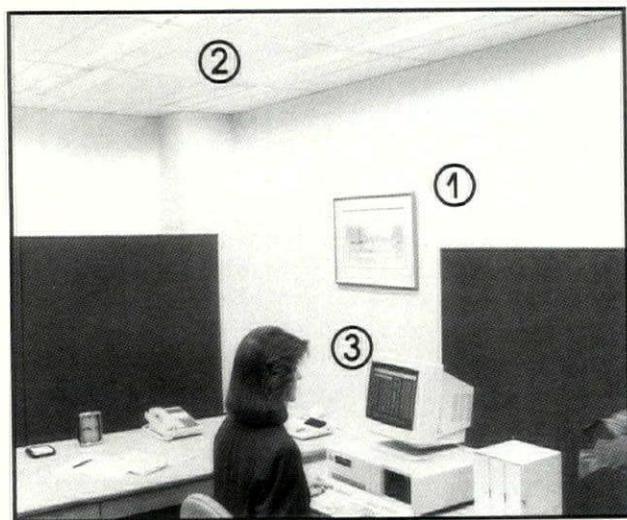
Obviously, competitive bidding minimizes contractor markup, even for sole-sourced materials. It is possible in negotiated or time-and-materials con-

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Techniques to manage costs include

1. Competitive bidding
2. Pre-arranged fixed rates

tracts to fix the markup percentages to prevent unfair profit-taking.

ALTERNATIVES TO THE STANDARD PROCESS

Taking into account the markups along the way, a lighting fixture's price from manufacturer to project owner, not including labor, can increase as much as 50 percent.

The principal method of reducing markup is for the project owner to buy the fixtures and turn them over to the electrical contractor to install. But the owner also assumes the responsibility for getting the right fixtures to the job site at the right time, for handling errors, and getting faulty products replaced. There are several ways this can be accomplished.

Buy from a distributor. This eliminates the electrical contractor's markup. Of all the owner-furnished fixture schemes, this is safest because the owner can rely upon the expertise of the distributor and rep to solve any problems. Total savings are typically around 10 percent, and the process is the least risky and time consuming to the owner.

Buy from a fixture broker. Fixture brokers, sometimes called "super distributors," buy luminaires at low cost from various manufacturers and resell them in quantity with low markup. Although the choice of products may be limited, the selection of manufacturers and the pricing structure is attractive. The owner's risk is increased as the broker is often out-of-state and typically has limited relationships with the local manufacturers' reps. As a result, the low price begets limited backup expertise and service in managing the project and solving problems. Total savings are typically 20 percent, but the owner's time commitment and risk is greatest.

Establish a national account. The larger lighting companies will sell directly to owners of large properties under national purchase accounts. This allows the owner to purchase any lighting equipment made by the manufacturer's various companies at low quantity prices. The owner receives the service of the local representative because sales commissions are still paid to the rep, plus the owner receives the support of the manufacturer's national sales force. Savings of 15-20 percent can be anticipated.

Electrical contractors vary in their response to owner-furnished lighting equipment. Some contractors don't care, others feel as if they have lost a substantial and legitimate means of earning a profit. Designers who work

on owner-furnished lighting projects should write careful specifications that make the contractor fully responsible for the luminaires upon delivery. The designer and owner must invest extra time in checking the shipment to make certain that the contractor is receiving a full and undamaged order. Also, whoever is responsible for placing the order should plan for changes and shrinkage; over-ordering as much as 5 percent on smaller quantity items is a good idea if the project is in a remote location.

Turnkey lighting services. Some companies will design and furnish lighting systems. A few will even provide the installation as well. Companies offering these services have traditionally been associated with a limited or specialized product line, such as recessed framing projectors or landscape lighting. Caution is in order here, as some companies have been known to include house-labelled versions of ordinary specification luminaires at premium prices.

The primary benefit to an owner using a turnkey lighting company is convenience; a single phone call coordinates everything. But the owner pays a hefty premium for this service; turnkey installations often cost as much as 50 percent more than conventionally furnished lighting installations, including design and equipment costs. ■

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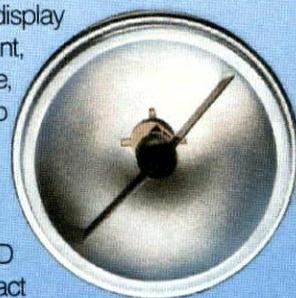


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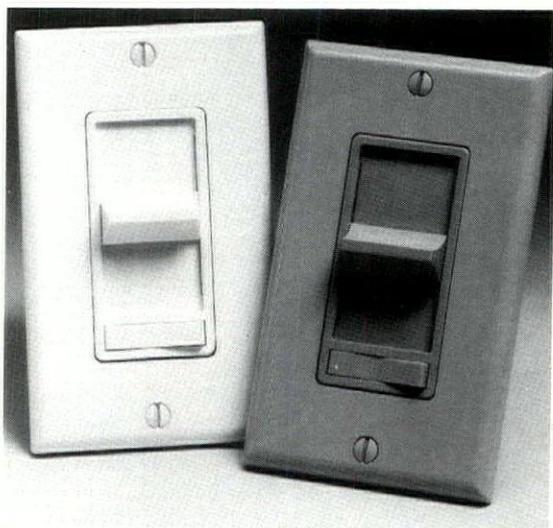
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▶ KEENE LIGHTING PRODUCTS' M5 MODULA SERIES, 2-foot x 2-foot and 2-foot x 4-foot parabolic lighting troffers, feature 3-inch deep aluminum louvers for low brightness. Keene Lighting Products (KLP), Wilmington, MA. **CIRCLE 62**

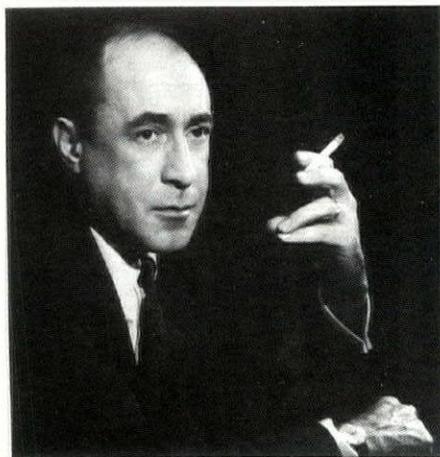
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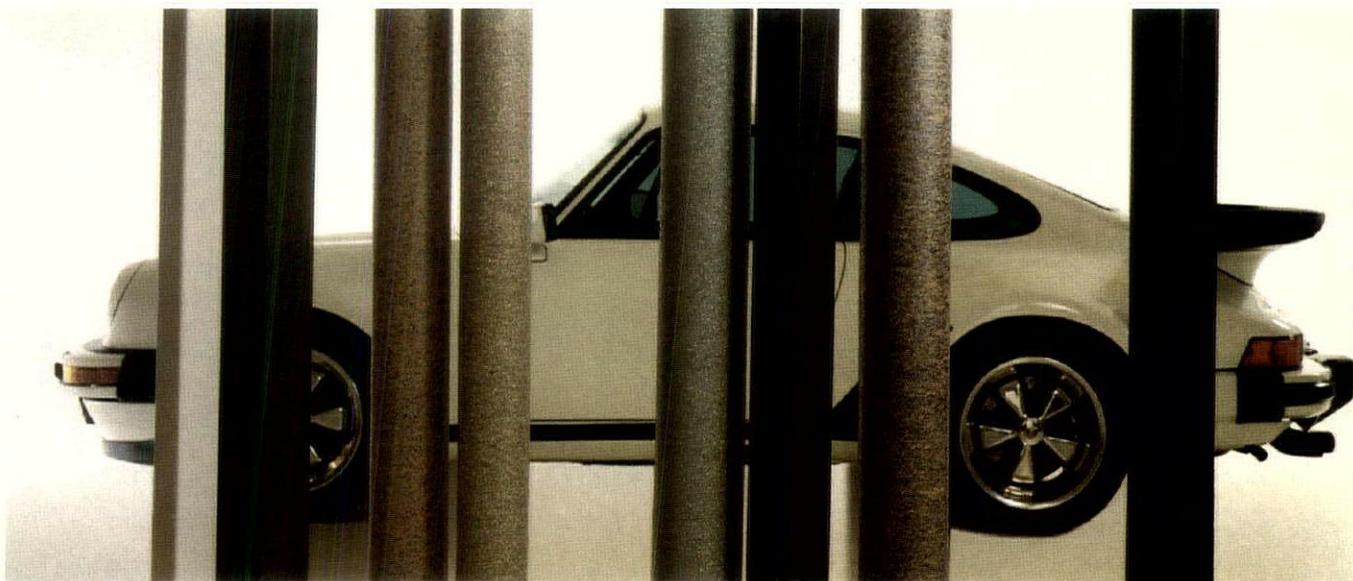
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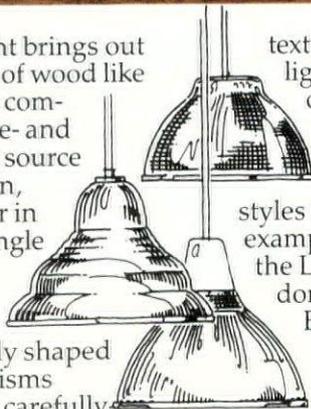
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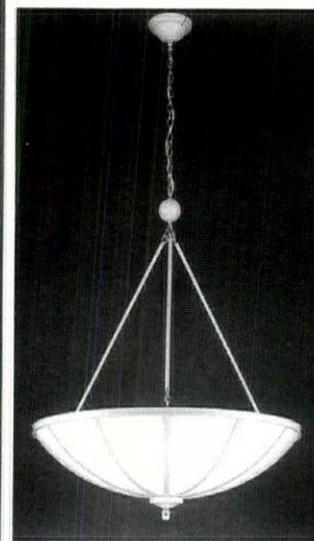
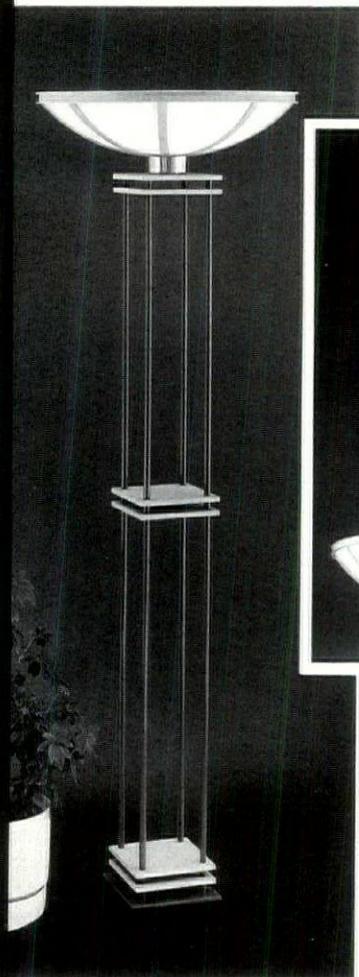
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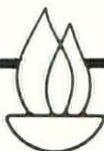


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Torchiere:
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*Architect:
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Philadelphia, PA*

*Lighting Design:
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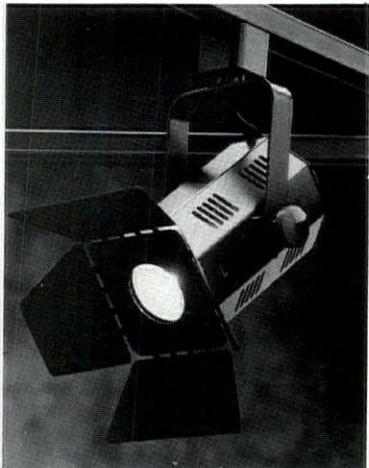
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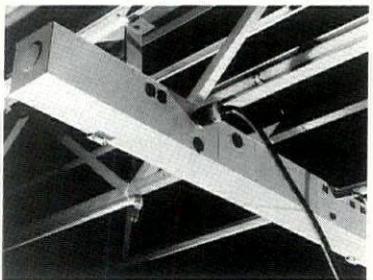
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▶ **LEVELITER**, FROM NIGHTSCAPING BY LORAN INC., is a direct-burial uplighting fixture designed to be used where a completely enclosed lamp is needed. The fixture uses an MR 16 lamp and has a diameter of 4 inches. The Leveliter is weather-tight and features a brass adjustable yoke to position the beam of light. Nightscaping by Loran Inc., Redlands, CA. **CIRCLE 64**

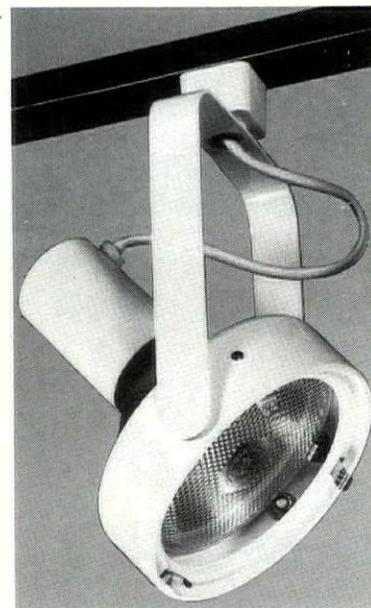
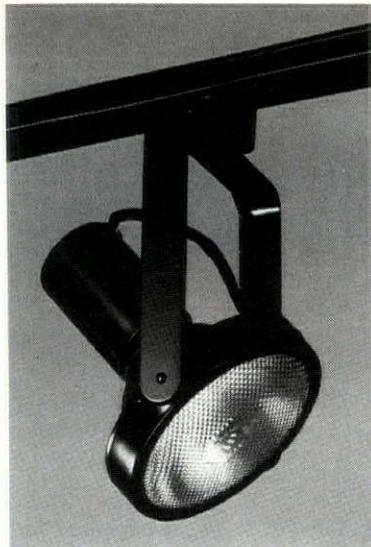


▶ **HALO LIGHTING'S POWER TRAC LAMPHOLDERS** are 5 inches in length from the base to the outer edge of the shutter, and have a maximum shutter opening of 3 inches. Halo Lighting, a division of Cooper Lighting, Elk Grove Village, IL. **CIRCLE 65**

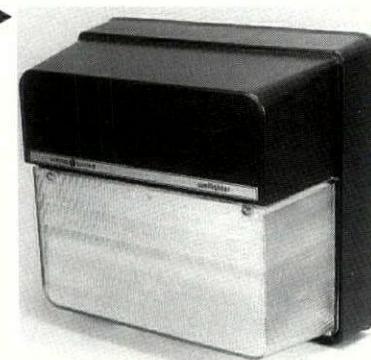


▶ **THE 5500 SERIES SURFACE RACEWAY SYSTEM FROM AIREY-THOMPSON** can accommodate a full line of circuit breakers, switches, and receptacles, and is made of extruded aluminum with a satin anodized finish. Airey-Thompson Co., Los Angeles. **CIRCLE 66**

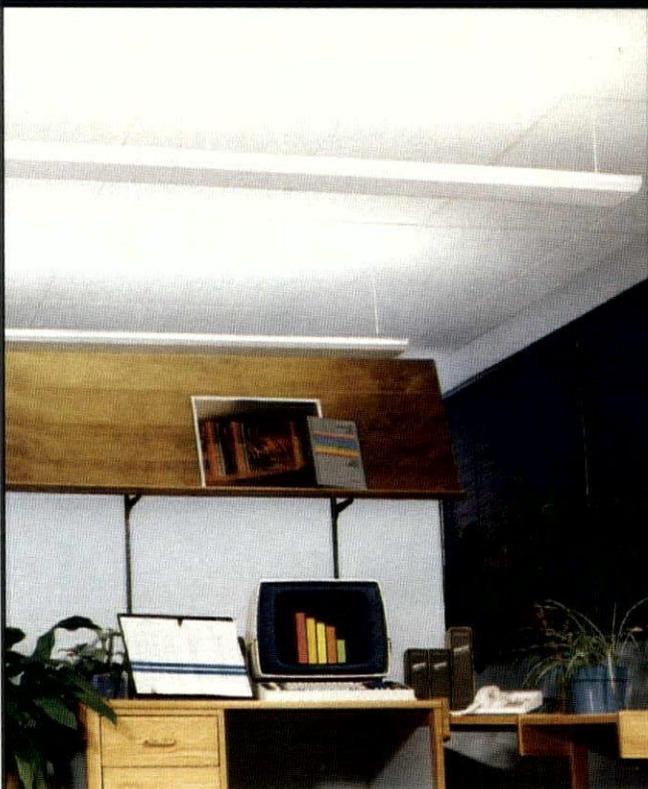
CON-TECH'S SERIES OF GIMBAL RING TRACK LIGHT LAMPHOLDERS are available in two styles and provide users with a choice when using them with the new halogen PAR 38 medium base lamp. The CTL838 model comes with a mounted spring lampholder and the CTL838/2 uses a slimmer design that is supplied with spring clips. Each lampholder provides fully adjustable horizontal and vertical rotation for the exposed PAR 38 lamp. Con-Tech Lighting, Deerfield, IL. **CIRCLE 67**



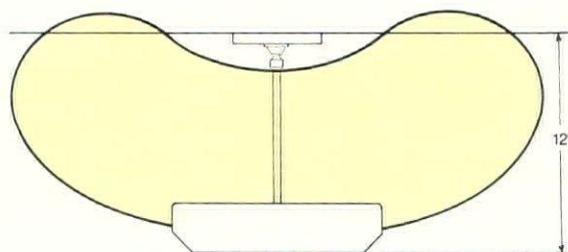
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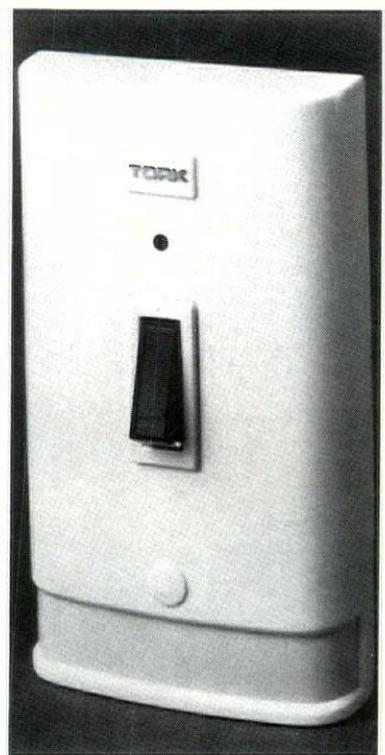
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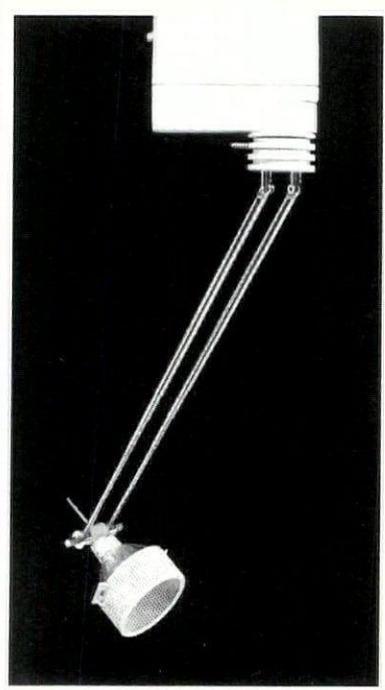
(C) = 905 WATTS → (T)
 (B) = 720 WATTS → (T)
 (E) = 821 WATTS → (T)
 = 992 WATTS → (T)
 BE 1000 WATT CAPACITY EACH

STARBRITE
LIGHTING LTD.

145 Saw Mill River Road
Yonkers, New York 10701
1 (800) 221-3116
FAX: (914) 965-7483



TORK'S IN-WALL, PASSIVE INFRARED SENSOR SWITCH has a wide angle lens that detects movement within a 180-degree view and in areas up to 800 square feet. The dual voltage unit (120 or 277 VAC) features an adjustable time delay shut-off mode of 5 to 11 minutes after no presence is detected. The unit can replace an ordinary toggle switch, fits a standard single gang box and can adapt to a double gang box. Tork, Mount Vernon, NY. **CIRCLE 69**

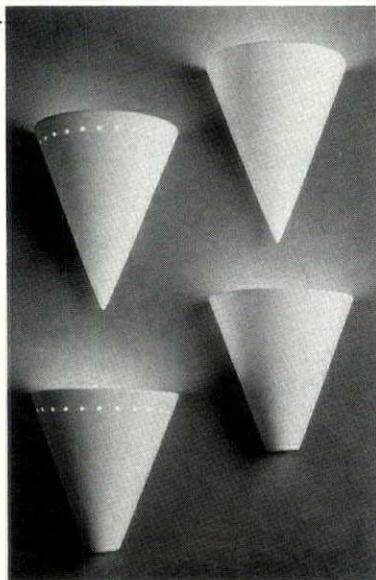


THE LIGHTDANCE SERIES FROM LAZIN LIGHTING consists of four different track and surface-mounted fixtures. In place of wire, telescopic and bendable arms carry the 12-volt current required for MR 16 lamps. The fixture is made of nickel-plated brass and molded plastic and comes in matte white or black. Lazin Lighting, NY. **CIRCLE 70**

BAUSCH & LOMB'S OPTIVEX UV FILTER blocks virtually all ultraviolet radiation, while transmitting visible light. This UV filter reduces photochemical degradation, enables the use of a broader range of light sources, and allows the increase of light levels without the risk of damage to display objects. The 2-inch diameter disk filter accommodates an MR 16 halogen lamp. Additional sizes are available upon request. Bausch & Lomb, Thin Film Technology Division, Rochester, NY. **CIRCLE 71**

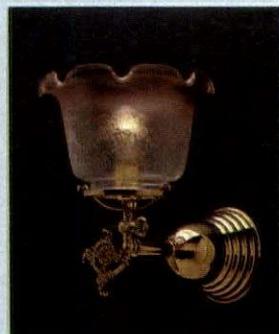
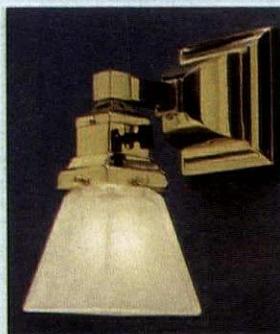
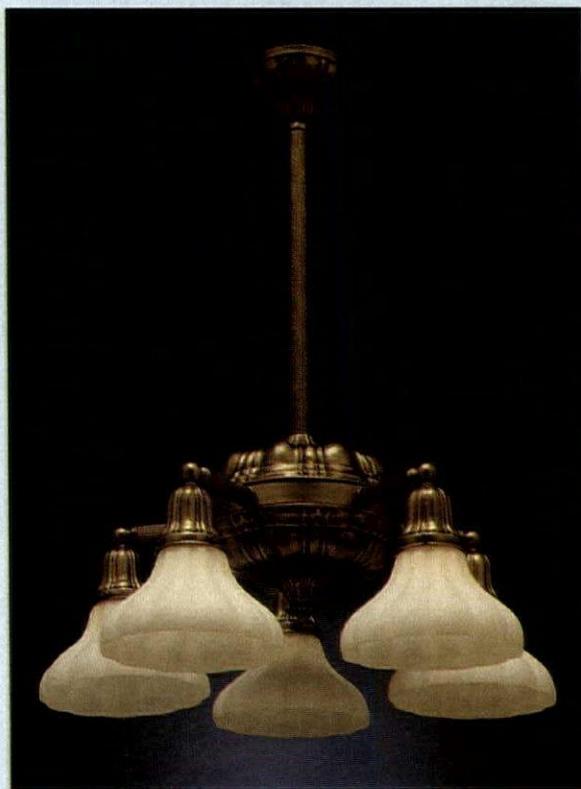


CONE SCONCES FROM THE AMBIANCE COLLECTION BY JUSTICE DESIGN GROUP are available in two styles. The regular model measures 8.25 inches x 10.5 inches with a 5.25-inch projection, and the cut cone model is 8.25 inches x 8.5 inches with a 5.25-inch projection. The perforated design is available in both styles. Justice Design Group Inc., Los Angeles. **CIRCLE 72**



"LIGHT SEEKING LIGHT DOTH LIGHT OF LIGHT BEGUILÉ"

SHAKESPEARE



View Craftsman, Victorian and Neoclassic lamps and fixtures in a whole new light. Request our catalog of fine, solid brass reproductions.

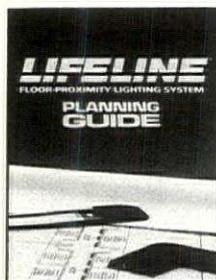


REJUVENATION LAMP & FIXTURE CO.

901 N. SKIDMORE PORTLAND, OREGON 97217 (503) 249-0774

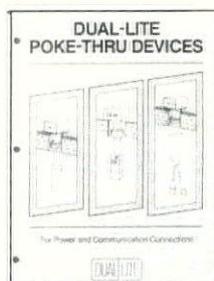
INTO THE PRESENT

Circle No. 33 on product card.



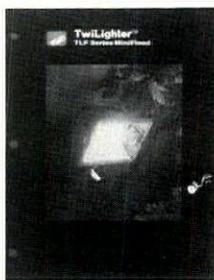
Emergency Escape Path Lighting

Loctite's six-page planning guide on emergency escape path lighting offers advice on planning exit path markings in public buildings. The installation of wire routings, exit signs, track assemblies, and power supplies are detailed with diagrams. Loctite manufactures the Lifeline escape path lighting system which features electro-luminescent strip lamps and exit signs. Loctite Luminescent Systems, Lebanon, NH. **CIRCLE 61**



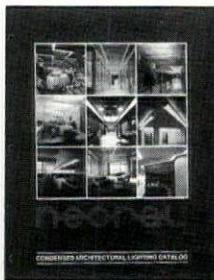
Power Connections

Dual-Lite's four page brochure on its line of Poke-Thru wiring devices for power and communication connections describes the applications, installation, and features of the devices. Product options and accessories are also described. Featuring a divided raceway, these devices allow power and communication cables to be fed through concrete floors and reinforced steel deckings. Dual-Lite, Wiring Products Division, Newtown, CT. **CIRCLE 53**



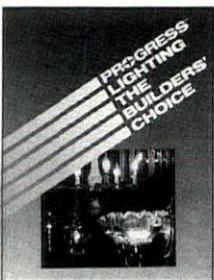
Multi-purpose Floodlight

Stonco Lighting's two-page, four-color brochure features its TwiLighter TLF Series Miniflood, suited for a broad range of applications including security, parking lot, facade, and sign lighting. This brochure details product features, outlines lamp options and wattages available, and diagrams the dimensions. Stonco Lighting, a Genlyte Co., Union, NJ. **CIRCLE 54**



Architectural Lighting

Neo-Ray's full-color, 48-page architectural lighting catalog features new products, photographs, detailed specifications and options, and photo-metric data. Also included are complete mounting details and fixture dimensions, as well as lighting applications and descriptions. Neo-Ray Lighting, Brooklyn, NY. **CIRCLE 55**



Home Lighting Fixtures

Progress Lighting's 32-page catalog for builders offers a selection of 225 fixtures for every room of the home and outdoors. Included are decorative chandeliers, sconces, pendants, track and recessed fixtures, and outdoor lanterns. Progress Lighting, Philadelphia. **CIRCLE 56**

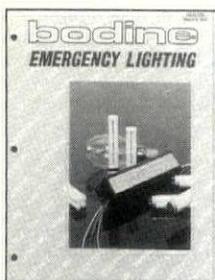
**SAXE
PATTERSON**

CERAMICS FOR ARCHITECTURE

Our Ziggurat Wall Sconces, of reinforced porcelain, come in 19 styles and 10 high-fire matte colors. Custom designs are also available. Send for our brochure.

Box 15 Taos NM 87571 505-758-9513

Circle No. 34 on product card.



Emergency Illumination

Bodine's four-color brochure offers information on how to convert twin-tube, quad compact, and standard fluorescent or HID fixtures into emergency lights. Bodine equipment automatically provides at least 90 minutes of unobtrusive emergency lighting from existing light sources. The brochure features information on operation, installation, and application. The Bodine Company, Collierville, TN. **CIRCLE 57**



Test & Measurement Instruments

The 214-page fourth-edition of Grainger Test and Measurement Instruments catalog contains over 2,000 items organized by application and product categories. Instruments are included for HVAC, precision measuring, environmental testing, electrical and electronics applications. W.W. Grainger, Inc., North Suburban, IL.

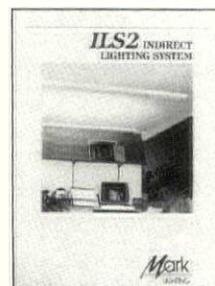
CIRCLE 58



Commercial Interiors

Holophane's eight-page brochure features its Classics Series luminaires for commercial interiors. Full-color illustrations depict the fixtures' decorative look of polished brass combined with prismatic glass shades. Ordering data is included, and dimensions, recommended wattages, shade styles, brass caps, and trim combinations are supplied. Holophane Co., Inc., Newark, OH.

CIRCLE 59



Indirect Luminaires

Mark Lighting introduces a new series of indirect luminaires designed for ceiling heights as low as 8 feet 6 inches. These new products are available in lengths from 2 feet through 8 feet and can be used in patterns or continuous rows. Mark Lighting Inc., Moonachie, NJ. **CIRCLE 60**

THE ORIGINAL CAST®
LIGHTING



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HID Available NOW

A Division of
Art Directions Inc.
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St. Louis MO 63112

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Fax 863-3278

Circle No. 35 on product card.

The ALESCO® Collection Of Lighting Miniatures



Recessed low voltage Mini-Trim and
Trimless fixtures install in 4" overall depth

SYLVAN DESIGNS, Inc.

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(818) 998-6868

Circle No. 36 on product card.

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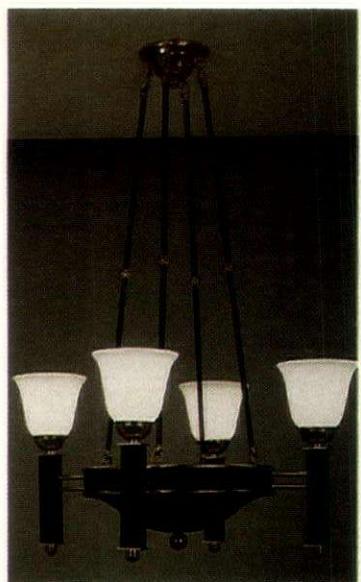
Outside Calif. 1-800-346-5932

Circle No. 37 on product card.

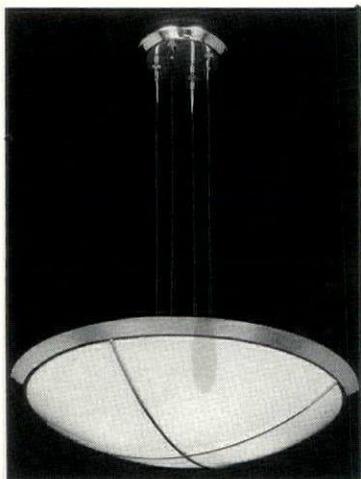
PRODUCT ADVERTISEMENTS REVIEW



HADCO EXPANDS ITS LANDSCAPE LIGHTING LINE with several new products including this cast bronze, low-voltage Tulip. The fixture, which uses a 27.5 watt 1156 lamp, measures 22.5 inches in height, and the tulip head is 4.5 inches in diameter. Hadco, Littlestown, PA. CIRCLE 50

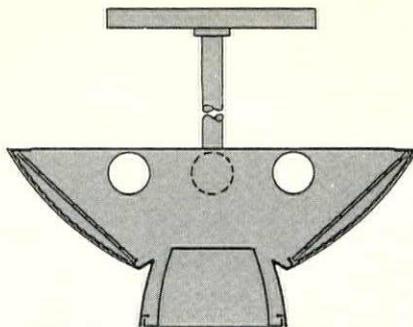


THE FRANKLIN CHANDELIER FROM WINONA LIGHTING features brass detailing, a black nextel finish, and an opal glass shade. The fixture measures 30 inches in diameter with an overall drop of 42 inches. The chandelier uses four 120 volt, 60-watt A 19 lamps. Winona Lighting, Winona, MN. CIRCLE 51



A CUSTOM PENDANT, DESIGNED BY SOM AND HORTON LEES, and produced by Appleton Lamplighter for Symphony Towers in San Diego, features brass bars retaining a 3-foot diameter, 6-inch deep opal acrylic dome. Four PL 13 lamps illuminate the dome. Appleton Lamplighter, Appleton, WI. CIRCLE 52

LIGHTEN THE LOAD . . .



EXTRUDED ALUMINUM DIRECT/INDIRECT LIGHTING FOR 8'-6" CEILINGS



- * Design Manual
- * Price Per Linear Foot
- * Photometric Data
- * Delivery Information
- * Sample Finish

Fax For Free Information FAST
718/456-5492

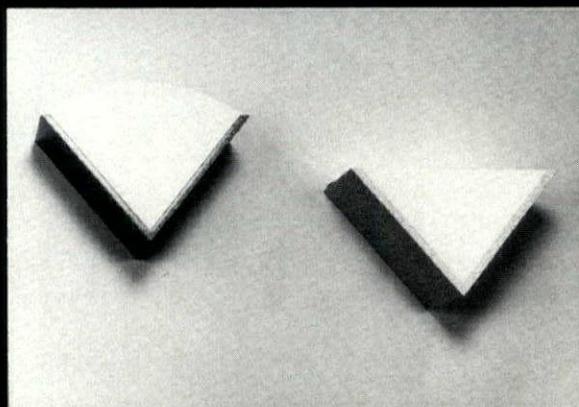
neoray
NATURALLY

537 Johnson Avenue, Brooklyn, NY 11237
Tel: 718/456-7400

Circle No. 38 on product card.

TRIBBLE

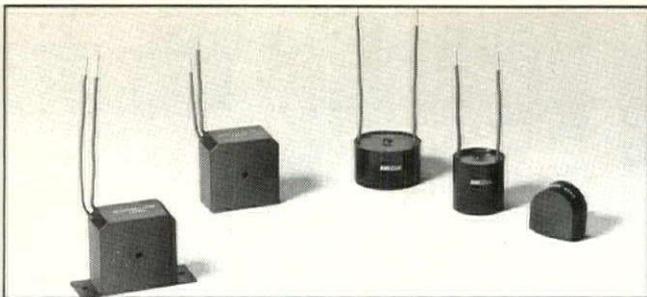
Incandescent wall sconce
fashioned from Solid Corian™
U.L. listed



For more information, call or write AamSCO at:
P.O. Box 15119, Jersey City, N.J. 07305 (201) 434-0722 Fax: (201) 434-8535

See us at Lightfair in Booth 1908.

Circle No. 39 on product card.



New Packaged Debuzzing Chokes Offer No Noise In No Time . . .

Extremely quick and easy to install for both new and retrofit applications, Amecon's new line of architectural chokes essentially eliminate noise in dimmers, lamps and fixtures. The chokes are professionally packaged to dramatically reduce installation time

as they mount to standard recessed fixtures, remote areas and wall boxes. They're built with high temperature, high impact, fire retardant UL recognized materials. Attractively priced, they're rated at 50 and 75 watts at 12 volts, and 400 to 750 watts at 120 volts.

CONFIG.	DIA.	HEIGHT	WIDTH	DEPTH	MTG.
CIRCULAR	2"			1-3/16"	Centerhole
	1-5/8"			1-1/2"	Centerhole
SQUARE "ARCH"	1-1/2"	2-3/32"	2-3/32"	1-1/4"	Centerhole
		1-3/8"	1-3/8"	3/4"	Vert/Horiz PCB/Vert

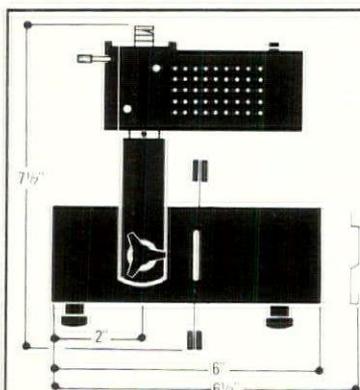
Applications are recommended for all types of architectural light dimmers: accent, decorative, display, and nearly anywhere a noise-rejection system is required. Call or write for new Technical Bulletin/Selection & Design Guide ALC-0689.



AMECON Quality Magnetics & Electronics

Amecon, Inc., 1900 Chris Lane, Anaheim, CA 92805
TEL: (714) 634-2220, FAX: (714) 634-0905

Circle No. 40 on product card.

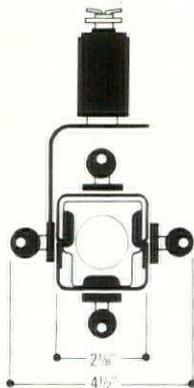


NEW MR35 Framing Projector

FEATURES:

- Accepts 12V 35W MR11 Lamps
- Framing Shutters
- Projects Standard or Custom Patterns
- Projects 35mm Slides
- Numerous Mounting Options
- Custom Colors Available

ANOTHER UNIQUE FIXTURE FROM TIMES SQUARE LIGHTING. CALL OR WRITE FOR A SPECIFICATION SHEET OR REPRESENTATIVE NEAR YOU.



TIMES SQUARE
LIGHTING

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(914) 947-3034 FAX (914) 947-3047

Circle No. 41 on product card.

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RATES

The Marketplace is a monthly feature of Architectural Lighting, offering readers easy access to lighting products and services for commercial, industrial, and institutional applications. Listings in this reference section are sold on an annual basis. First Line (Bold Face) \$990/yr. Additional lines \$690/yr. Mini Display \$3600/yr., \$1990/6 months.

Career Opportunities, Situations Wanted and Used Equipment For Sale Ads are sold on a monthly basis. Ads are \$28 per line with a 4 line minimum. Mini Display ads are \$160 (1X), \$140 (6X), \$110 (12X).

For full information and closing dates, contact Nancy Berman 800-950-1314 or 212-869-1300.

CAREER OPPORTUNITIES

REGIONAL SALES MANAGER LIGHTING EQUIPMENT

We are a young, growing and aggressive manufacturer of track and specialized lighting for department stores, seeking a regional sales manager for the western states. Based in Los Angeles, the successful candidate will possess a minimum of five years sales experience preferably in the lighting business.

Responsibilities include establishing, directing and managing a sales force of independent commercial and showroom representatives. Strong proven sales and sales management record a must.

For immediate consideration send resume and salary history to: Mr. Mel Adler, Calco Lighting, Inc., 7751 Alabama Ave., Canoga Park, CA 91304.

COMMERCIAL LIGHTING FIXTURE Sales Representatives needed for South Eastern US to sell 3M SILVERLUX Fluorescent lighting systems. Responsible for the sale of new and retrofit systems. High commissions, local travel. Please respond in writing with resume to Ken Adams, Mor-Lite, Inc., 10801 75th St., N., Largo, FL 34647.

SALES AGENTS NEEDED to call on Lighting Wholesalers/Showrooms for 14 year old Manufacturer of unique UL Listed Fluorescent Floodlights. All territories open EXCEPT FL, GA, AL, CA, IL & OH. Kelsey-Kane Lighting Mfg. Co., 4541 NE 11th Avenue, Ft. Lauderdale, FL 33334, 800-444-3187.

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Low voltage/slim profile linear lighting system/high intensity halogen lamps/extensive apps.

FIBERSTARS, Int. & Ext. Lighting, 47456 Fremont Blvd., Fremont, CA 94538 800-327-7877

MARCO LIGHTING, 6100 S. Wilmington Ave., Los Angeles, CA 90001 213-583-6551
Recessed Architectural Lighting: Compact Fluorescents—Low Voltage Capsylite—HID—Incandescents.

NL CORP., 14901 Broadway, Cleveland, OH 44137 Fax 216-662-9069 or 216-662-2080
Recessed HID and incandescent, decorative; custom; church; 20, 30 & 60 amp track; fluorescent lighting systems. Call for more information.

ACCESSORIES AND COMPONENTS

MAXIMUM TECHNOLOGY, 80 Industrial Way, Brisbane, CA 94005 415-468-2560

AMBIENT LIGHTING SYSTEMS (INTERIOR)

LITHONIA LIGHTING. We cover the lighting spectrum 404-922-9000 Fax: 404-922-1841
PEERLESS LIGHTING CORP., P.O. Box 2556, Berkeley, CA 94702 Fax 415-845-2776, Phone 415-845-2760

AREA LIGHTING (EXTERIOR)

EMCO LIGHTING, 7300 50th St., P.O. Box 1640, Milan, IL 309-799-3111
SPRING CITY ELECTRICAL MFG. CO., Spring City, PA 19475 Call 215-948-4000 or Fax 215-948-5577
Historically authentic, cast iron ornamental lighting posts, bollards and adaptations.

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STRAND ELECTRO CONTROLS, 2975 S. 300 W., Salt Lake City, UT 84115 801-487-6111
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EMERGENCY LIGHTING

ELECTRO POWERPACS CORP. (see ad below) 617-876-9220



DYNARAY EMERGENCY LIGHTING

Compact, self-powered exit, only 7/16" high. Mounts over doorways under most 8' ceilings. Integral sealed ni-cad batteries and charger board. Architecturally designed, anodized extruded aluminum exit available with incandescent or fluorescent lamps.

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FAX 617/661-4400 TEL 617/876-9220

LAMPS

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OSRAM CORP., 110 Bracken Road, Montgomery NY 12549 914-457-4040

USHIO AMERICA, 20101 S. Vermont Ave., Torrance, CA 90502 ... FAX 800-776-3641 or 800-326-1960
Manufacturer of MR11, MR16, T3 Quartz, Minican and DC Bayonet Halogen Lamps.

VENTURE LIGHTING INTL., 32000 Aurora Rd., Solon, OH 44139 800-437-0111
Metal Halide, High and Low Pressure Sodium, Mercury, MR-16 and MR-11 Display Lamps. Many new and unique products not available from other manufacturers.

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ELECTRO-ELF, 10011 Olive St., Temple City, CA 91780 800-728-0081 Fax 818-579-1333

Energy Efficient Fluorescent lighting. Sealed Waterproof Fixtures available in many styles.

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Manufacturer of Timberwood Lighting Standards. A superior pressure treated Douglas Fir laminate for decorative outdoor lighting support. Contact Richard Baxter.

OEM MANUFACTURERS

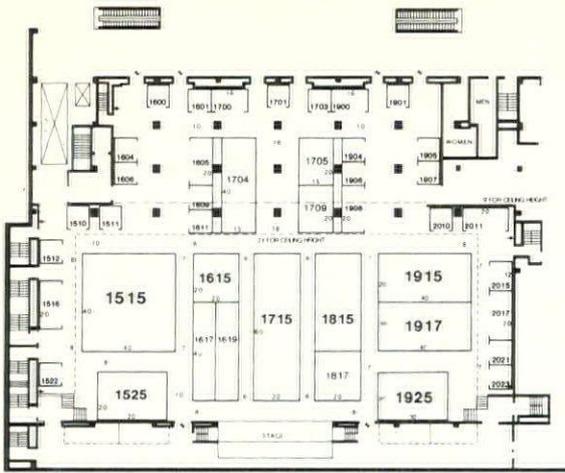
EDWIN GAYNOR CO., 200 Charles St., Stratford, CT 06497 ... 203-378-5545, outside CT 800-EGAYNOR or FAX 203-381-9019 For more information about fluorescent wiring devices, switches and lamp holders, call and ask for Jill Sapak.

SPACE FRAME/TRUSSING

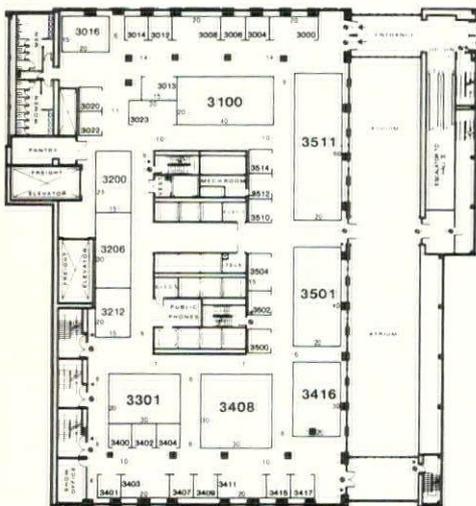
MEROFORM/MERO Structures Inc., P.O. Box 610, Germantown, WI 53022 Fax 414-255-6932 414-255-6553
Manufacturer of MEROFORM Spaceframe, MEROTRUSS, and MERODOME Modular Systems.

LightFair Exhibitors

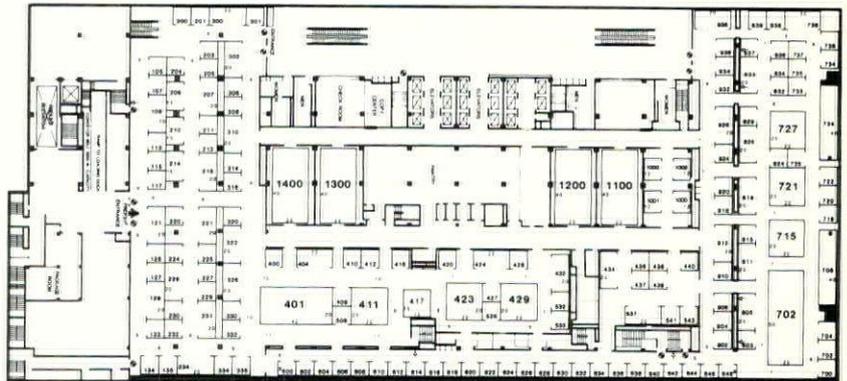
A list of LightFair exhibitors, their booth numbers, and floor plans of the New York Hilton exhibit rooms are provided for all who plan on attending the show, which will run from April 10-12, 1990.



BALLROOM FLOOR



AMERICAS HALL



SECOND FLOOR

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*Division of Thomas Industries